# Subject and Author Index to Volume 268 American Journal of Physiology

American Journal of Physiology: Cell Physiology

American Journal of Physiology: Endocrinology and Metabolism

American Journal of Physiology: Gastrointestinal and Liver Physiology

American Journal of Physiology: Lung Cellular and Molecular Physiology

American Journal of Physiology: Heart and Circulatory Physiology

American Journal of Physiology: Regulatory, Integrative and Comparative Physiology

American Journal of Physiology: Renal, Fluid and Electrolyte Physiology

Advances in Physiology Education

# Page-Issue Guide American Journal of Physiology Volume 268

January	February	March	April	May	June
C1-C282	C283-C534	C535-C797	C799-C1075	C1077-C1319	C1321-C1561
E1-E184	E185-E374	E375-E536	E537-E796	E797-E1038	E1039-E1223
G1-G188	G189-G388	G389-G538	G539-G723	G725-G878	G879-G1078
L1-L159	L161-L346	L347-L538	L539-L696	L697-L867	L869-L1063
H1-H515	H517-H934	H935-H1382	H1383-H1772	H1773-H2165	H2167-H2578
R1-R302	R303-R575	R577-R823	R825-R1083	R1085-R1342	R1343-R1545
F1-F178	F179-F356	F357-F541	F543-F791	F793-F979	F981-F1232 S1-S105*

<sup>\*</sup>Advances in Physiology Education

# Subject Index to Volume 268

A-4166 (hypoglycemic agent)

effects on ion channels in pancreatic β-cells, E185

Acetaldehyde

effects on bronchial epithelial cell migration and matrix attachment, L723

Acetate infusion

effects on muscle pyruvate dehydrogenase activity and glucose-fatty acid cycle, E1007

Acetoacetate

and propionyl-L-carnitine effects on ischemic cardiac contractile dysfunction, H441

Acetylcarnitine

in muscle, effects of acetate infusion and exercise, E1007

Acetylcholine

dimaprit-evoked colonic release, G465 effects on [Ca2+], in submucosal nasal gland acinar cells, L361

effects on cGMP levels in air-breathing vs. water-breathing fish, R816

effects on charybdotoxin actions in colon muscle electrical activity, C619

effects on endothelium-dependent responses in fetal pulmonary arteries vs. pulmonary veins, H1586

potentiation of acetylcholine-induced K+ currents in atrial myocytes, H1313 mechanism, and nature of K+ cur-

rents, H1322 release from airway smooth muscle nerve endings, effects of substance

P and vasoactive intestinal peptide, L432 release from equine airway parasympathetic nerves, catecholamine effects

on, L368 release from tracheal parasympathetic nerves, β-adrenoceptor effects on,

L950 release in bronchial smooth muscle, effects of prostaglandins and thromboxane A2 analogue, L47

role in pancreatic enzyme secretion, E349

vascular relaxation from, effects of pulse pressure on, H359

Acetylcholine receptors

see also Muscarinic receptors role in glucose-induced pancreatic insu-

lin release, E336 Acetyl-coenzyme A

in muscle, effects of acetate infusion and exercise, E1007

Acetylsalicylic acid, see Aspirin Achievement scores in anatomy and

physiology course and Gregorc learning style indicator results, S56

and Myers-Briggs psychological type indicator results, S61

Acid

extrusion from proximal tubule in pHi regulation, effects of luminal and basolateral CO2/HCO3, F179, F193

lingual trigeminal nerve sensitivity, factors affecting, R58

taste response, chorda tympani nerve response to HCl under voltage clamp, C1295

Acid-base homeostasis

hydrogen-potassium ATPase β-subunit expression in kidney, F363

renal metabolic alkalosis and hyperparathyroidism from sustained intravenous neutral phosphate loading, F802

Acid-base transport mechanisms

in proximal tubule S3 segment, acid extrusion and CO2/HCO3 alkalinization in pH<sub>i</sub> regulation, F179, F193

Acidosis

see also pH

and activation of sodium/hydrogen exchangers, C283

in chronic renal failure, effects on insulin actions in glucose and protein metabolism, E121

effects on arteriolar α-adrenoceptor constriction, H2068

effects on injury-associated fatty acid accumulation in proximal tubule cells, F110

effects on turtle heart responses to various input pressures, R683

extracellular, effects on muscle branched-chain ketoacid dehydrogenase, C1395

hypercapnic, coronary vasodilation during, role of nitric oxide, H39 intra- and extracellular, effects on in-

ward Na+ current in ventricular myocytes, H1749 intracellular, effects on skeletal muscle

[Ca2+]i-force relations, C55 limiting of, role in myocardial ischemic preconditioning, H935

metabolic, basolateral, effects on potassium transport and transepithelial voltage in cortical collecting duct, F490

metabolic, effects on choline whole body release and clearance, R1520

metabolic vs. respiratory, effects on bone calcium efflux, C80 role in hypoxic and hypercapnic airway

smooth muscle relaxation, L207 Acinar cells

of lacrimal glands, Ca2+-activated Clchannels in, pH, effects on, C647

Acousticolateralis system

mechanotransduction in hair cells: stereociliary bundle structure and function (review), C1

Acquired immunodeficiency syndrome

dementia from, and HIV gp120 activation of astrocyte K\* channels, C1440

Acrolein

effects on bronchial epithelial cell migration and matrix attachment, L723

Acrosome reaction

and characteristics of calcium channels in boar sperm plasma membrane, C1284

cardiac, effects of tachycardia-induced cardiomyopathy, H2426

skeletal, gene regulation, promoter elements responding to stretch overload, C918

of smooth muscle, transcriptional control regions in promoter, C1259

Actin

in pancreatic acinar cells, effects of supramaximal secretagogue stimulation, G328

role in pulmonary capillary integrity, L753

Actin cytoskeleton, see Cytoskeleton **Actin filaments** 

see also Cross bridges; Myofilaments adenosine 3',5'-cyclic monophosphateindependent regulation of CFTR, C1552

disassembly by Clostridium difficile toxin B, role of calcium influx, G487

role in hypoxia-stimulated capillary network formation in lung microvessel endothelial cells, L789

**Action potentials** 

atrial

ionic basis for developmental changes, in humans, H1335

repolarization, role of Ca2+-dependent Cl-current, H1992

conduction between two ventricular cells, asymmetry of calcium current magnitude, H2476

configuration, and transient outward current, in epicardium, developmental changes, H2513

duration, in ventricular myocytes, effects of extracellular magnesium, H2321

in Purkinje fibers, effects of a2-adrenergic stimulation, H2024

in ventricular myocytes, changes during culture, C993, C1002

ventricular, thyroid effects on duration, role of thyroid-induced changes in Na+-K+ pump, H1838

Activator protein-1

interaction with DNA and glucocorticoid receptors in mononuclear cells,

**Active learning** 

andragogical vs. pedagogical, S66 in context, S75 (letter), S81

Actomyosin

inhibition in muscle fatigue, role of MgADP, C480 Acute phase reactants

and biomarkers of normal aging, R536 Acute phase response

and a2-macroglobulin gene expression during hibernation in ground

squirrel, R1507 to influenza A virus, behavioral changes and cytokine levels, R78

Acylcarnitines, long-chain

effects on ventricular myocytes, [Na+] increase and transient inward current. H2405

and reperfusion recovery in palmitateperfused hearts, H2505

Adenine nucleotide translocator renal mitochondrial, postischemic thyroxin effects on, F651

#### Adenohypophysis, see Pituitary gland Adenoma cells

thyroid-stimulating hormone-secreting, somatostatin effects on, mechanisms, E558

#### Adenosine

cardiac effects, in calm vs. hyperexcited rabbits, role of protein kinase C, H1037

modulation of α2-adrenergic constriction of coronary arterioles, H2487

non-role in myocardial hibernation, H2294

protective effects in calcium paradox injury, mechanisms, C838

role in dehydroepiandrosterone effects on lipolysis, R1374

role in hypoxic protection against H2O2induced myocardial damage, H614

role in neonatal cerebrovascular responses to hypoglycemic hypoxia,

signal transduction, receptor subtype involved in PKC regulation, H271

#### Adenosine 3',5'-cyclic monophosphate

see also Cyclic nucleotides; Protein kinases

activation of Cl- conductance in dogfish rectal gland, C70

activation of low-conductance anion channel in Cl--secreting cells of teleost fish, R963

and activation of Na+/H+ exchangers, C283

and β-adrenergic receptor subtypes in collecting tubules, F1070

in airway smooth muscle cells (review), L1

airway smooth muscle relaxation from, role of sarcoplasmic reticulum Ca2+ ATPase, L407

and carotid artery relaxation, role of myosin light chain kinase phosphorylation, H2466

coupling to β1-adrenergic receptors on proximal tubule epithelial cells, F553

and cytokine release from glomerulosa cells, E114

effects on electrogenic chloride secretion in inner medullary collecting duct cell line mIMCD-K2, F854

effects on Na-K-Cl cotransport in cerebral vascular endothelial cells, C747 effects on peripheral vs. inner [Ca2+]i

levels in airway smooth muscle cells, C771

effects on sodium channels in cortical collecting duct, F480 and endothelin effects on juxtaglomeru-

lar renin release, F39 endothelin-1 effects on production in

alveolar epithelial cells, L192 hepatocellular synthesis, mechanism of bile acid suppression, G300

hormone-induced production in nonliver cells, bile acid effects on, G908 and insulin-induced release of plasmino-

gen activator from platelets, H117 levels in colonic crypt cells, effects of PGE2, G270

non-role in anesthetic-induced airway smooth muscle relaxation, L166

and phosphorylation of delayed rectifier K+ current in vascular smooth muscle, H926

production in airway epithelial cells, tannin effects on, L851

regulation in pinealocytes, role of phosphatases, E458

responsive element in angiotensinogen gene, R105 role in angiotensin II-dependent, ANF-

mediated transport inhibition in proximal nephron, F730 role in chloride and fluid transport in

proximal tubule, F204 role in pial vasodilation in newborn B-adrenoceptor-induced, H1071 prostaglandin-induced, H1436

role in regulation of Cl- secretion in intestinal goblet cell, C1503

role in secretagogue stimulation of parietal cell aminopyrine accumulation,

role in surfactant protein B gene transcription and mRNA levels in fetus, L481

role in TNF-α effects on endothelial barrier function, C1104

role in tumor necrosis factor-α regulation of transepithelial permeability, F315

role in vasopressin downregulation of endothelin-1 binding in cortical collecting ducts, F385

and somatolactin-induced Pi absorption in flounder proximal tubule, R577 synthesis in pial vein, and novel 5-HT<sub>1</sub>-

like receptor in pig, H1383 vs. Ca2+ regulation of Cl- conductance, in oviduct of normal vs. cystic fibro-

sis mice, C708 Adenosine 3',5'-cyclic monophosphate phosphodiesterase

protein kinase C activation in renal collecting tubules, F808

Adenosine 3',5'-cyclic monophosphate-dependent protein kinase and angiotensin II effects on Ca2+ cur-

rent in sinoatrial node, H1053 Adenosine 5'-cyclic diphosphateribose

non-role in ryanodine-induced Ca2+ release from hepatocyte microsomes, G1017

Adenosine 5'-cyclic diphosphoribose activation of skeletal sarcoplasmic reticulum Ca2+ release channel, C1235

Adenosine 5'-diphosphate acidic, Ca2+-insensitive smooth muscle contraction after, C21

possible role in muscle fatigue, C480 role in skeletal muscle contracture, C317

Adenosine 5'-diphosphate-ribosyl cyclase

in renal epithelial cells, C741 Adenosine 5'-triphosphate

activation of Cl-conductance in dogfish

rectal gland, C70 cellular levels, relation to cellular Pi levels. F375

extracellular luminal, activation of Cl conductance, C425

extracellular, renal arteriolar vasoconstriction from, role of calcium influx, F876

hydrolysis, Gibbs free energy, and forearm power output, C1474

input pressure effects on, in anoxic or acidotic turtle heart, R683

intracellular, response to progressively lower myocardial Po2, H1675

levels in oxidative vs. glycolytic metabolism in carotid artery smooth muscle, C628

levels in type II cells, effects of H2O2, L129

myocardial, effects of transient adenosine vs. ischemic preconditioning, H1149

in newborn enterocytes, contribution of glutamine vs. glucose, R334

pancreatic decrease, role in pancreatitis pathophysiology, G592

regulation of lung surfactant secretion, role of protein kinase C, L108

renal mitochondrial translocator activity, postischemic thyroxin effects on, F651

resistance artery contraction from, role of cGMP, H1223

role in bile acid transport across trophoblast from fetus to maternal blood, G685

role in force activation in smooth muscle, C237

role in myocardial ischemic preconditioning, H935

role in skeletal muscle proteolysis in cancer-associated cachexia, E996

and role of creatine kinase in swellingactivated K-Cl cotransport in red cells, C660

Adenosine 5'-triphosphate diphosphohydrolases, see Ecto-ATPases

Adenosine 5'-triphosphate receptors role in nucleotide-stimulated leukocyte adherence to pulmonary artery endothelial cells, L666

Adenosine 5'-triphosphate-magnesium chloride

posthemorrhagic use, effects on endothelial cell function, H1390

Adenosine diphosphoribose

activation of skeletal sarcoplasmic re-ticulum Ca<sup>2+</sup> release channel, C1235

α-Adenosine receptor antagonists effects on ischemia-reperfusion lung injury, L1036

Adenosine receptors

hyperactivity and phosphorylationregulated coupling in Zucker rat adipocytes, E693

in normal and CF airway epithelial cells, C1520

role in adenosine protection against calcium paradox injury, C838

role in ATP-induced cAMP production in T84 apical membrane, C425

subtypes in adenosine-induced pulmonary vasodilation, H1862

subtypes in protein kinase C regulation, H271

Adenosinetriphosphatases, see P-Glycoprotein

Adenovirus

as vector for gene transfer

to bronchial submucosal glands for cystic fibrosis therapy, L657 to fetal lung cells, L839

to salivary submandibular gland, G1074

Adenylate cyclase

and B-adrenoceptor-induced pial vasodilation, effects of NG-nitro-L-arginine on, H1071

in airway epithelial cells, tannin effects on, L851

coupling to β<sub>1</sub>-adrenergic receptors on proximal tubule epithelial cells,

and phosphorylation of delayed rectifier K+ current in in vascular smooth muscle, H926

in proximal tubule, defective coupling to dopamine-1 receptors in Dahl rats, R231

Adenylate cyclase inhibitor

effects on G protein inhibition of renal cortical Na-HCO3 cotransporter,

Adenylate cyclase-coupled receptors somatostatin, in hamster glucagonoma cells, E40

Adenylyl cyclase

role in portal vein stenosis effects on cardiac β-adrenoceptors, G410

somatostatin-mediated activity, effects of proximal small bowel resection, E343

Adenylylcyclase-linked receptors in airway smooth muscle cells (review),

Adhesion molecules

intracellular adhesion molecule 1, role in oxidized chylomicron-induced leukocyte-endothelial cell adhesion, H2175

Adhesion molecules CD11b/CD18 and neutrophil migration across T84 epithelial cells, C472

Adhesion molecules CD11/CD18 and neutrophil-glomerular endothelial cell interactions, F1

Adipocytes

see also Fat-storing cells

β<sub>3</sub>-adrenergic receptor, regulation of gene expression and mRNA splice variants, in mouse, C1040

brown, thermogenic response and β-adrenoceptor subtype in guinea pig,

catecholamine-induced lipolysis, mechanisms of regional variations, E1135

early change in insulin stimulation of phosphatidylinositol 3-kinase in obesity, E604

effects of GLUT-4 overexpression on glucose metabolism and fatty acid synthesis, E956

in obese Zucker rat, A1 adenosine receptor hyperactivity and phosphorylation-regulated coupling, E693

Adipose tissue

effects of NO inhibition, R1533 metabolic and antidiabetic effects of β<sub>3</sub>-adrenergic agonist BRL-35135 in obese mice, E678

norepinephrine metabolism and proneness to diet-induced obesity, R389

responses to cold, effects of aging and gender, R931

thermogenesis and lipid storage, effects of corticosterone on, R183

brown and white, glucocorticoid and insulin effects, R1209

brown and white, in suckling Zucker rats, and β-adrenoceptor agonist effects on obesity, E1039

calculation of mass, new hydration constant for body density and body water, E153

digoxin effects on fat oxidation rate, E1051

dose-response relations of dietary fat and body fat deposition, E546

exercise and lipoprotein lipase gene expression, E229

food intake, diet composition, and metabolism in parabiotic partner of obese rat, R874

impaired postprandial triacylglycerol clearance in obesity, E588

linoleate and α-linolenate tissue stores, effects of fasting-refeeding cycling on, R498

white, fat pad-specific catecholaminergic innervation in hamster, R744

Adiposity, see Obesity

Adrenal gland see also Hypothalamic-pituitary-adrenal axis

angiotensin II receptor AT1A and AT1B subtypes, F220

angiotensin II receptor subtype AT2, mRNA distribution during development, F922

blood flow and oxygenation in acute plus chronic hypoxemia, H974

glomerulosa cells

cytokine release and factors regulating, E114

growth responses to angiotensin II,

insulin effects on angiotensin II actions, E100

sensitivity to ACTH, in newborn, effects of sympathectomy and maternal separation, R1281

splanchnic nerve-induced catecholamine release, effects on VIP release, R1449

unsaturated fatty acid stimulation of steroidogenesis, R1484

Adrenal hormones

(1S,3R)-1-aminocyclopentane,1,3,-dicarboxylic acid effects on, R1026

role in extracellular matrix synthesis by type II cells, L885

Adrenal steroids, see Corticosteroids Adrenergic activity

renal, glomerular and tubular interactions with nitric oxide, F1004

α-Adrenergic agonists

effects on sympathetic salivation and on parasympathetic salivation and vasodilation, R1196

β-Adrenergic agonists

E858

β2, gender differences in growth response to clenbuterol, E1077

effects on acetylcholine release from tracheal parasympathetic nerves, L950 effects on myofibrillar gene expression.

modulation of Na+-K+-ATPase in type II alveolar cells, L983

β-Adrenergic blockade

and autonomic control of heart rate during left ventricular dysfunction and heart failure, R310

plus exercise, effects on amino acid metabolism, E910

α-Adrenergic mechanisms

role in inhibition of insulin-mediated glucose uptake in muscle, E305

role in muscle glucose metabolism in insulin-induced hypoglycemia, E248

α-Adrenergic pathways

role in gastric slow wave dysrhythmias of motion sickness, G539

Adrenergic receptors

and phosphatase role in regulation of pineal cAMP and cGMP, E458

and phospholipase D activation in lacrimal gland acini, C713

stimulation of airway cilia, role of NO, C1342

# a-Adrenergic receptors

angiotensin II-induced, in vascular smooth muscle cells, H1006

role in coronary arteriolar α-adrenergic constriction vs. metabolic dilation, H2487

α1 and α2, arteriolar constriction by, effects of acidosis and hypoxia, H2068 α2-inhibitory, role in airway cholinergic

nerves, L368 α<sub>2</sub>, postjunctional, electrophysiological

effects in Purkinje fibers, H2024 α2, role in tricyclic antidepressant sympatholytic effect, R1429

**B-Adrenergic receptors** 

and airway smooth muscle contraction, role of G proteins and calcium-activated K channels, L221

β1, on proximal tubule epithelial cells,

β2, in skeletal muscle, effects of BRL-47672 (morpholine compound) on, E159

β<sub>2</sub>, pulmonary, glucocorticoid effects on transcription rate, L41

β2-excitatory, role in airway cholinergic nerves, L368

β<sub>3</sub>, metabolic and antidiabetic effects of agonist BRL-35135 in obese mice,

β<sub>3</sub>, regulation of gene expression and mRNA splice variants, in mouse adipocytes, C1040

cardiac, effects of portal vein stenosis on, G410

hepatic, downregulation after hemorrhagic shock, G749 in parabrachial nucleus, neuropeptide

effects on, R786

and phosphorylation of delayed rectifier K+ current in vascular smooth muscle, H926

role in catecholamine-induced lipolysis, E1135

role in epinephrine effects on hepatic tumor necrosis factor and interleukin-6 production, R896

role in fish gill branchial vasculature response to hypoxia, R771

β-Adrenergic receptors (continued)

role in sympathetic and reflex parasympathetic interactions in salivary secretion, R1188

subtypes in collecting tubules, F1070 subtypes,  $\beta_3$  absence in guinea pig adipocytes, R98

β-Adrenergic regulation

of heart function, and NO effects on cardiomyocyte calcium current, C45

α-Adrenergic stimulation

of CFTR Cl<sup>-</sup> current in cardiomyocytes, dialysis effects on, H1795

coronary

role in control of coronary blood flow, H895

vasomotor responses after ischemia/ reperfusion, H886

reduced inotropic myocardial responses in left ventricular hypertrophy, H1202

α<sub>1</sub>-Adrenergic stimulation

of sodium chloride (potassium) cotransport in airway epithelial cells, role of protein kinase C, L414

**B-Adrenergic stimulation** 

(1S,3R)-1-aminocyclopentane,1,3,-dicarboxylic acid effects on, R1026

coronary, role in control of coronary blood flow, H895 effects on obesity development in suck-

ling Zucker rats, E1039 lipolysis from, effects of dehydroepi-

androsterone, R1374 role in muscle glucose metabolism in insulin-induced hypoglycemia, E248

vasodilation from, in newborn pial artery, role of nitric oxide, cAMP, and cGMP, H1071

Adrenergic vasoconstriction

coronary

modulation by adenosine, H2487 role of ATP-sensitive K channels, H1077

Adrenergic-adenosine 3',5'-cyclic monophosphate signal transduction pathway

tannin effects on, L851 Adrenocortical axis

in newborn, effects of sympathectomy and maternal separation, R1281

Adrenocorticotropic hormone

adrenal sensitivity to, in newborn, effects of sympathectomy and maternal separation, R1281

biological activity of precursors in adult vs. fetal adrenal cells, E623

effect on cytokine release from glomerulosa cells, E114

effects of loading and unloading right heart baroreceptors on secretion, R1069

how many glucocorticoid-sensitive releasable pools, E85

interleukin-1-induced, effects of cholestasis and role of impaired hypothalamic  $PGE_2$  release, G404

secretion and clearance by fetal lung, E845

secretion, response to mental stress, effects of aging and depression, R865

Adrenocorticotropin

plasma levels, in fetus, after carotid occlusion, and immaturity of vagal afferent buffering systems, R343 Adrenomedullin

cardiovascular actions in conscious sheep, H2574

glomerular and tubular localization and renal actions, F657

pulmonary vasodilation from whole molecule vs. fragments, H2211

Adult respiratory distress syndrome endotoxin effects on cultured human pulmonary artery endothelial cells, L239

hydrogen peroxide effects on surfactant biosynthetic enzymes,129

and iron-derived reactive oxygen species, lung endothelial heme as iron source, L321

leukotoxin vasodilation in pulmonary circulation, L123

pentoxifylline effects on pulmonary neutrophil kinetics, L27

Aerobic metabolism

in fish white muscle, during hypoxia and recovery, R1178

Age

effects on body composition, basal metabolic rate, thermogenesis, and protein turnover, E1083

effects on brain damage and mortality from hyponatremic encephalopathy, R1143

Aggrephores

of bladder, vesicle fusion proteins in, C792

Aging

see also Maturation

age-related changes in atrial myocyte transient outward and inward rectifier currents, H1335

biomarkers for, use of serum protein patterns, R536

caffeine effects on norepinephrine kinetics, fat oxidation, and energy expenditure, E1192

cardiovascular effects, mathematical model for transmitral and pulmonary venous flow, H476

effects of angiotensin I-converting enzyme inhibition, intracellular calcium-vasoreactivity coupling, R1394 effects on adrenal and cardiovascular

responses to mental stress, R865 effects on arterial wall production of cy-

ffects on arterial wall production of cytokines with and without endotoxin, H2288

effects on baroreceptor control of heart rate, studies in ambulatory humans, H1606

effects on brown fat and skeletal muscle responses to cold, R931

effects on capillary pressure physiology in healthy volunteers, H147

effects on diet restriction-induced changes in glucose metabolism, E941

effects on dopaminergic renal excretory responses to protein feeding, F613 effects on esophageal secondary peristal

effects on esophageal secondary peristalsis and sphincter pressures, G772 effects on growth hormone actions in

skeletal muscle glucose transport, E902

effects on heart rate, heart rate variability, and AV conduction, H1441

effects on hyaluronan serum levels in rat, C952 effects on insulin- vs. contraction-stimulated glucose transport, E1154

effects on norepinephrine kinetics and metabolism, R278

effects on NPY/NPY Y<sub>1</sub> receptor/G protein complex in rat brain cortex, R192

effects on oral-pharyngeal and upper esophageal sphincter function during swallowing, G389

effects on protein synthesis in muscle and liver, E328

effects on renal production of dopamine, F1087

effects on serotonergic control of circadian rhythmicity, R293

effects on thyroxine-induced coronary angiogenesis, H419

effects on vasoreactivity in canine hindlimb resistance vessels, H92 erectile dysfunction in, role of declining

penile NO synthesis, H467 exercise-induced anabolism in older

men, effects of added growth hormone, E268

of FRTL-5 thyroid cell line, effects on TGF- $\beta$  responses to TNF- $\alpha$  and TSH, R808

myofibrillar protein synthesis reduction in, effects of resistance training on, E422

physical training effects on collateral blood flow in peripheral arterial insufficiency, H1174

protein metabolism, effects of exercise and dietary protein level, E1143

and stress-induced elastase and IL-1β secretion, effects of dietary fish oils, R208

survival time response to 100% oxygen, L539

waist-to-hip ratio and enhanced insulin sensitivity in older athletes, E484

Airway

see also Epithelial cells, of airway; Muscle, smooth, airway; and individual components

auxotonic changes in caliber, measuring by computerized videomicrometry of microexplants, L519

cilia, β-adrenoceptor stimulation, role of NO, C1342

ciliary motility

C-type natriuretic peptide effects on ciliary beat frequency, L1021 ethanol effects on, role of nitric oxide,

L596 nitric oxide-dependent, effects of

TNF-α and ÎL-1β, L911 distal, transepithelial Cl<sup>-</sup> secretion and submucosal gland number, L526

endothelin  $ET_A$  and  $ET_B$  receptors, antagonist effects in guinea pig, L846

eosinophil chemotaxis in and narrowing of, effects of inhibiting 5-lipoxygenase and cyclooxygenase, L446

epithelial barrier function, oxidant effects on permeability and repair, L284

hyperresponsiveness

antigen effects on bronchial parasympathetic ganglia, L879

in asthma, and vasoactive intestinal peptide effects on airway smooth muscle cell proliferation, L1047

- increased muscarinic receptor expression in Basenji-greyhound dog,
- role of myosin light-chain kinase activity, L739
- role of PKC in nonsensitized and passively sensitized bronchial smooth muscle, L966
- ion transport, in cystic fibrosis mouse vs. humans, C297
- maturation, dexamethasone effects on tropoelastin expression in fetal lung, L491
- neuropeptide receptor distribution, L584
- nonadrenergic noncholinergic inhibitory system, respiratory syncytial virus effects, L1006
- parasympathetic nerves, acetylcholine release from, catecholamine effects on, L368
- smooth muscle nerve endings, acetylcholine release from, effects of substance P and vasoactive intestinal peptide, L432
- tone, regulation by CO2, role of pHi effects on tracheal smooth muscle voltage-dependent Ca2+ channels, L642

- jejunal absorption, effects of vagal capsaicin-sensitive primary afferent fibers, G695
- transport in liver, effects of starvation and sensitivity to sulfhydryl groups,

### L-Alanine

- effect on membrane conductance and apical membrane potential in Aplysia intestine, R1050
- hepatic uptake in protein-deficient suckling rats, E368

#### Alarm behavior

and loss of adenosine-induced negative inotropism, role of protein kinase C. H1037

#### Albumin

# see also Permeability

- fatty acid-bearing, metabolic fate in proximal tubule cells, F1177
- gene expression in hepatocytes, regulation by insulin, glucagon, and dexamethasone, E6
- glycosylated, circulating, glomerular handling, F913
- possible role in cardiomyocyte uptake of long-chain fatty acids, H1659
- receptor-mediated endocytosis in proximal tubule cells, effects of endosomal pH, F899
- serum, galactosylated, recognition by liver, G849

### Aldosterone

- angiotensin II-induced synthesis in glomerulosa cells, insulin effects on,
- effects on Na+ transport and GTP hydrolysis by renal epithelial cell apical membranes, C557
- effects on short-circuit currents in renal epithelial cells, C762
- in hormone-induced differentiation of Na+ transport across larval bullfrog skin, C218

- plasma levels, effects of long-term endothelin infusions, R375
- plasma levels, effects of peptide YY on, F754
- and protein-induced dopaminergic renal excretory responses, aging effects on. F613

- chloride dependence of osmolality- and angiotensin II-induced changes, R8 effects of L-arginine analogues, R1137 potassium-induced, role of L-type and
- T-type Ca2+ currents, C985 serum levels, time- and dose-related effects of indomethacin or meclofenamate, F468

## Alkaline phosphatase

- intestinal, and apical appearance of surfactant-like particles, C1401
- intestinal, appearance and secretion in parallel with surfactant-like particles, E1205
- osteoblastic, effects of metabolic vs. respiratory acidosis, C80

# Alkalosis

metabolic renal, and hyperparathyroidism from sustained intravenous neutral phosphate loading, F802

### Allergy

- antigen effects on bronchial parasympathetic ganglia, role of histamine H1 receptors, L879
- ozone effects on mast cells, L902 respiratory IL-8-induced transcellular
- eosinophilic chemotaxis, L117 simultaneous study of chemoattraction and bronchoconstriction in guinea pig tracheal explants, L446

#### Allometry

- of body mass-tissue metabolism relationship, in mouse, rat, rabbit, sheep, and cattle liver and kidney, R641
- of muscle relaxant pharmacokinetics and pharmacodynamics in mammals, R85

#### Allopurinol

and effects of hepatic hypoxia on E. coliinduced TNF-a expression, G311

Alveolar cells type I, protein rTI40, use as marker of

# lung injury, L181

- β-adrenergic agonist modulation of Na+-K+-ATPase, L983
- asbestos-induced injury, role of reactive oxygen species and DNA strand breaks, L471
- cystine transport system and glutathione regulation, L21
- early postnatal development, effects of indomethacin on, L56
- effects of surfactant protein A and bacterial endotoxin, alone and combined, L144
- extracellular matrix synthesis, role of adrenal hormone, L885
- extracellular matrix turnover kinetics,
- fetal, differentiated, effect of O2 dose on surfactant proteins and phospholipid production, L818
- fetal, inflammatory mediator-induced nitrate and nitrite production in,

- fetal, ion-transporting phenotype, governing role of fetal extracellular matrix, L762
- oxidant injury to, surfactant protein A-carrying, pH-sensitive liposomes for antioxidant delivery, L374
- oxygen-induced hyperplasia, role of basic fibroblast growth factor and its receptor, L455
- presence of L-type Na+ channels, C1148
- proliferation after hypoxic injury, role of A- and D-type cyclins and cyclindependent kinases, L625
- surfactant biosynthetic enzymes, effects of H2O2, L129
- surfactant secretion, regulation by ATP, role of protein kinase C, L108

#### Alveolar macrophages, see Macrophages, alveolar

#### Alveoli, see Lung, alveoli Amidation

role in bile acid effects on DNA synthesis in regenerating liver, G1051

#### Amiloride

- and pHi regulation in thin ascending limb of Henle's loop, F410
- sensitive and insensitive short-circuit currents in renal epithelial cells, aldosterone and vasotocin effects on,
- sensitivities of sodium/hydrogen ex-
- changer isoforms, C283 sensitivity of Na<sup>+</sup> channels in salivary intralobular ducts, C350

#### Amino acids

- blood levels, and effects of local epinephrine infusion on muscle metabolism.
- branched-chain, dehydrogenase in muscle, increase with extracellular acidemia, C1395
- branched-chain, α-ketoisocaproic acid hepatic metabolism in cirrhosis,
- cationic, lysine transport by placental microvillous membrane vs. basal membrane, C755
- effects on intake of highly nutritive diet vs. sucrose, R520

### excitatory

- metabotropic glutamate receptors, metabolic, hormonal, and hemodynamic effects, R1026
- role in hypertonicity-induced vasopressin release, R1034
- hepatic transport, in protein-deficient suckling rats, E368
- and H+-peptide cotransport system in MDCK cells, F391
- imbalance in diet, conditioned taste aversion in rat, role of serotonin3 receptor, R1203

#### kinetics

- cortisol effects on, E501
- exercise-induced acceleration, E514 metabolism, effects of exercise plus β-ad-
- renergic blockade, E910
- metabolism in canine gastrocnemius, R759
- neutral, effects on lysine uptake by placental microvillous and basal membranes, C755
- placental transport (review), C1321

#### Amino acids (continued)

protein synthesis rate, measurement, in vivo 'flooding' method with minimal precursor pool activity assumptions, E735

in skeletal muscle, transmembrane transport and intracellular metabolism, E75

stimulation of insulin secretion, effects of incretins and cholecystokinin on, E949

synthesis from glutamine in newborn enterocytes and effects of glucose on, R334

transport across renal brush-border membrane, role of protein kinases, F155

transport by system A, stimulation by micretubule disruption in vascular smooth muscle cells, C1512

#### γ-Aminobutyric acid A/benzodiazepine receptors

upregulation during anoxia in turtle brain, R1332

# γ-Aminobutyric acid receptors

class B, in rostral ventrolateral medulla, R428

# $\gamma$ -Aminobutyric acid<sub>A</sub> receptor complex

and dehydroepiandrosterone effects on sleep, E107

#### γ-Aminobutyric acid, receptors

in hypothalamic dorsomedial nucleus, blockade-induced intestinal motility, G514

#### (1S,3R)-1-Aminocyclopentane,1,3,dicarboxylic acid

metabolic, hormonal, and hemodynamic effects, R1026

#### Aminoguanidine

and inducible nitric oxide synthase role in ischemic brain damage, R286

# p-Aminohippurate

basolateral transporter in proximal tubule S3 segment, F1109

#### p-Aminohippuric acid clearance drawbacks of constant-infusion tech-

drawbacks of constant-infusion tech nique, F543

#### 4-Aminopyridine

binding site in K<sup>+</sup> channels, C535 and phosphorylation of delayed rectifier K<sup>+</sup> current in vascular smooth muscle, H926

# Aminopyrine

accumulation in parietal cells, role of cAMP in gastrin and carbachol actions, G82

#### Ammonia

metabolism in canine gastrocnemius, R759

permeability of erythrocyte membrane, study by saturation transfer nuclear magnetic resonance, C686

### Ammonium ion

effects on renal mitochondrial Na<sup>+</sup>/H<sup>+</sup> antiport, C1227

#### **Amniotic fluid**

volume reduction, model of maternal hyposmolality, R358

#### Amphiphiles

palmitoyl-L-carnitine, inhibition of Na/K pump current in ventricular cells, H1027

#### Amrinone

effects on sepsis-induced muscle protein wasting, E491

# Amylase

increased acinar content in genetically diabetic Otsuka Long-Evans Tokushima Fatty rat, E531

pancreatic, nerve-mediated secretion, presynaptic inhibition by serotonin, G339

#### Anabolic drugs

BRL-47672 (morpholine compound), effects on skeletal muscle growth and  $\beta_2$ -adrenoceptors, E159

#### **Anabolic steroids**

effects on left ventricular compliance and contractility, H1096

#### Anaerobic metabolism

in fish white muscle during hypoxia and recovery, R1178

#### Anaphylaxis

intestinal, food protein-induced, effects on colon longitudinal muscle contractility, G764

#### **Anaplerosis**

method for calculating rate of chemical flux in heart, E397

and propionyl-L-carnitine effects on ischemic cardiac contractile dysfunction. H441

# Andragogical learning

vs. pedagogical learning, S66

#### Androgens

effects on left ventricular compliance and contractility, H1096

#### Anesthetics

# see also Volatile anesthetics

effects on cerebral blood flow cycling, H569

effects on sympathetic responses to area postrema stimulation, H1086

# Angina pectoris

syndrome X, endothelin vs. stenosis effects on myocardial flow distribution, H1276

### Angiogenesis

of coronary collaterals, ischemia-induced, effects of protamine on, H720

electrical skeletal muscle stimulator with adjustable duty cycles, use in rabbit and rat, H1373

in embryonic heart, role of thyroid hormones, H811

exercise effects on collateral blood flow in peripheral arterial insufficiency, H1174

gastric, from basic fibroblast growth factor, timing of ulcer healing effects, G276

hypoxia-stimulated capillary network formation in lung microvessel endothelial cells, L789

### Angiogenic growth factor

expression regulation by hypoxia, metals, and chelators, C1362

### Angioplasty

restenosis after

thrombin-induced migration of vascular smooth muscle cells, C1195

thrombin-induced mitogenesis in aortic smooth muscle cells, C1141

## Angiotensin I-converting enzyme

chronic inhibition, effects on aging, intracellular calcium-vasoreactivity coupling, R1394

#### Angiotensin II

α<sub>1</sub>-adrenergic receptor induction in vascular smooth muscle cells, H1006

aldosterone synthesis from, in glomerulosa cells, insulin effects on, E100 astroglial uptake of glucose from, path-

in brain, role in cardiovascular, vasopressin, and renin responses to hemorrhage, R1500

way involved, E384

and effects of L-arginine analogues on aldosterone secretion, R1137

effects on AT-1 transgenic cardiomyocytes, H1471

effects on [Ca<sup>2+</sup>]<sub>i</sub> in proximal tubule cells, F330

effects on chloride transport in early proximal tubule, F723

effects on endotoxin- and cytokine-induced nitrite formation in astroglia, C700

effects on glomerular structure, morphometric analysis, F82

effects on mesotocin and vasopressin secretion by brushtail possum marsupial, R1319

effects on pH<sub>i</sub> in vascular smooth muscle, C580

effects on renal microcirculation, and high-protein vs. low-protein diet, F302

effects on transforming growth factor-β secretion from neonatal cardiac fibroblasts, C910

fetal vs. maternal pressor effects and clearance rate, E237

generation in isolated glomerulus, mediation by renin-angiotensin system, F266

L-162,313, a nonpeptide mimic, R820 mitogenic, cell-cycle, and growth responses in adrenal glomerulosa cells. E135

mitogenic effects in thick ascending limb, vs. effects on proximal tubule, F940

negative chronotropic effect on pacemaker cells, H1053

neuronal activation in rostral ventrolateral medulla, R272 and osmolality effects on aldosterone

secretion: role of chloride influx, R8 and peptide fragment from type 2 receptor of feets on powerpal delayed re-

tor, effects on neuronal delayed rectifier K<sup>+</sup> current, C278

phosphatidylcholine hydrolysis from, cGMP effects on, C376

possible role in endothelin-induced pressor and renal actions, R395

possible roles as growth factor in developing kidney and adrenal gland, F922

pulmonary vascular bed responses to, effects of PKC inhibitors on, L532

role in cardiovascular response to hemorrhage, effects of hypertension on, H2302

role in proximal nephron transport inhibition by atrial natriuretic factor,

- role in renal hemodynamic effects of ACE inhibitors in diabetic hyperfiltration, F588
- role in subfornical organ-paraventricular nucleus-spinal cord pathway,
- stimulation of tubuloglomerular feedback in hypertensive ren-2 transgenic rats, F821
- thirst from, and angiotensin receptor subtype in organum cavum prelamina terminalis, R1401
- vasoconstriction from, mechanisms of potentiation by lithium, H2009
- and venous function in fish, H1814 vertebral artery infusion, renal effects on plasma renin and central effects on urinary sodium, F296
- Angiotensin II receptor antagonists effects on L-162,313 angiotensin II-mimicking actions, R820

### Angiotensin III ([Des-Asp1]angiotensin II)

- central effects on caudal hypoglossal neurons and role of angiotensin receptor AT<sub>1</sub>, R1242
- Angiotensin peptides
  - ANG IV, effects on pulmonary vascular bed, vs. other vasoactive peptides, 1.302
- comparison of effects on hindquarters vascular bed in cat, H2418
- pulmonary vascular bed responses to, effects of PKC inhibitors on, L532

# Angiotensin receptors

- and angiotensin II inhibition of L-type Ca2+ current in sinoatrial node cells, H1053
- and angiotensin II-stimulated glucose
- uptake by astroglia, E384 agonist effects in rostral ventrolateral
- medulla, R272 and angiotensin II inhibition of endotoxin-induced NO synthase in astroglia, C700
- coupled signaling and growth responses in transfected proximal tubule cells, C925
- role in angiotensin III central effects on caudal hypoglossal neurons, R1242
- regulation of renal growth factors and clusterin in neonatal ureteral obstruction, F1117
- AT<sub>1</sub> vs. AT<sub>2</sub>, role in vasopressor responses to angiotensin peptides, L302
- AT1A, AT1B, mRNA localization in kidney and presence in other organs, F220
- - peptide fragment from, effects on neuronal delayed rectifier K+ current, C278
- mRNA distribution in developing kidney and adrenal gland, F922
- subtype in organum cavum prelamina terminalis mediating thirst, R1401
- subtype activity in hindquarters vascular bed in cat, H2418
- in temperature-sensitive SV40-immortalized proximal tubule cell line,

#### Angiotensin-converting enzyme inhibitors

- effects on arterial remodeling after myocardial infarction, H2092
- effects on endothelin-induced pressor and renal actions, R395
- effects on intracellular sodium and pH, C366
- effects on sarcoplasmic reticulum calcium pump in cardiomyopathic hamster, H1947
- renal hemodynamic effects in diabetic hyperfiltration, role of kinins, F588 Angiotensinogen
- - gene expression, synergism between 8-bromo-cAMP and dexamethasone, R105
- 2,5-Anhydro-D-mannitol
  - feeding response to, effects of parabrachial nucleus lesions on, R676 metabolic effects, on respiratory quotient and fuel oxidation, R299
- **Anion channels** 
  - low-conductance, cAMP-activated, in Cl--secreting cells of teleost fish, R963
- Anion exchangers
  - AE1, AE2, role in osmotic regulation of chloride transport in Xenopus oocytes, C201
  - AE1, variant NH2-terminal cytoplasmic domains, in chicken kidney and erythroid cells, F503
- Anion secretion
  - colonic, histamine H2 receptor-induced, role of VIP-ergic and cholinergic pathways, G465
- Anions
  - in urine, inhibition of calcium oxalate monohydrate crystal adhesion to renal epithelial cells, F604
- Anorexia, see Food intake

# Anoxia

- see also Hypoxia
- effects on [Ca2+]i, vs. hypoxia, reoxygenation, and metabolic inhibition, H1045
- effects on turtle heart responses to various input pressures, R683
- hepatocyte death from, role of Ca2+ and mitochondrial permeability transition, C676
- in turtle brain, upregulation of GABAA/ benzodiazepine receptor during, R1332
- Antidepressants
  - tricyclic, sympatholytic effect, site and mechanism, R1429
- Antidiuretic hormone, see Vasopressin; Vasotocin
- Antigen
  - effects on lung after sensitization, attenuation by neurokinin depletion, L781
- mechanism of bronchial action, L879
- Antioxidant defense mechanisms
- and metabolic depression, in land snail, R1386
- Antioxidant defense systems
  - glutathione cycle, role in modulating oxidant-inhibited Ca2+ signaling, H278
- **Antioxidant enzymes** 
  - in bronchial epithelial cells, effects of cytokines on, L71

delivery to pulmonary epithelial cells via surfactant protein A-carrying, pHsensitive liposomes, L374

#### Antioxidants

- and canine reperfusion fibrillation, H295 effects on hemodynamics and oxygen extraction in endotoxic shock,
- α-ketoacids as H<sub>2</sub>O<sub>2</sub> scavengers in reducing menadione cytotoxicity, C227
- role in survival time response to 100% oxygen and effects of aging on, L539
- α<sub>1</sub>-Antitrypsin
- alveolar concentration, effects on light vs. heavy surfactant metabolic subtypes, L438
- Antropyloroduodenal motility
- after ingestion of nonnutrient liquid, effects of posture and gravity, G868

- abdominal, vascular reactivity, effects of exercise training and hypothyroidism, H1428
- blood flow in rat, assessment of transittime ultrasound 1- and 2-mm probes, H1368
- blood velocity, utility of high-frequency pulsed Doppler ultrasound, H499
- cytokine production, effects of aging and endotoxin, H2288
- endothelial cells
  - functional responses to varying oxygenation states, H749
- presence and secretion of atrial natriuretic peptide, H921
- vs. endocardial cells: morphology, growth, PG release, H250
- Escherichia coli endotoxin effects on release of endothelium-derived relaxing factor and NO, H955
- hemodynamics in newborn vs. fetus, H558
- NADPH-dependent superoxide production, H2274
- role of calcium-activated potassium channels in NO-mediated relaxation, L152
- smooth muscle cells, properties of hypertension-induced humoral factors,
- vasoconstriction, angiotensin II-stimulated, mechanisms of potentiation by lithium, H2009
- Aortic nerve
  - and central respiratory drive effects on barosensitivity of rostral ventrolateral medulla, R909
- - sleep-associated, blood pressure and heart rate oscillations, role of carotid body chemoreflex, H2145
- **Apolipoproteins**
- apo AI, catabolism sites and rate in nephrotic rat, F532
- Apoptosis
  - of hepatocytes, bile acid-induced, role of serine protease translocation to nucleus, G613
- in metanephroi of bcl-2-deficient mice,
- Appetite, see Feeding response Apyrases, see Ecto-ATPases

Aquaporins

AQP-CHIP and AQP-CD, presence in cysts from autosomal dominant polycystic kidney, F398

aquaporin-1, localization in nephron and renal vascular structures, F1023 vasopressin effects on apical localization

in collecting ducts, C1546 Arachidonate metabolism

in angiotensin II-induced aldosterone synthesis, insulin effects on, E100 Arachidonic acid

effects on lactotroph [Ca2+], and prolactin release, E1215

relation to eicosanoid synthesis and n-3 fatty acid content in cardiomyocytes, H308

roles of leukotriene B4 and extracellular Ca2+ in phospholipase A2 activation, C138

tannin-mediated release from macrophages, role of calcium influx, L33 tissue depletion, effects on renal sensory

receptors, R164

vs. eicosapentaenoic acid, pressor response and thromboxane B2 release in pulmonary hypertension, H2252

plasma kinetics and effects of dietary arginine levels, E360

synthesis from glutamine in newborn enterocytes and effects of glucose on, R334

transport by system y+, regulation in differentiating Caco-2 cells, G578

L-Arginine

effects on blunted pressure-dependent changes in vasa recta blood flow and natriuresis in SHR, F907 effects on cardiac intrinsic nervous sys-

tem, R403

effects on endotoxin-induced hepatic vascular hyporeactivity to phenylephrine, G177

effects on nitric oxide suppression of hepatocyte urea production, G183

transport into aortic smooth muscle cells and role of NO synthase inducers, H1158

L-Arginine analogues

effects on aldosterone secretion, R1137 effects on coronary artery vasomotion, H1966

Arginine vasopressin, see Vasopressin Arginine vasotocin, see Vasotocin Arrhythmias

bradycardia, vagally induced, effects of Met-enkephalin-Arg-Phe, H848

Chagas' disease effects on epicardial myocyte phase 1 repolarization and transient outward K<sup>+</sup> current. H1258

of gastric slow wave, from motion sickness, role of cholinergic and α-adrenergic pathways, G539

tachycardia

cardiomyopathy from, left ventricular and cardiomyocyte function during and after, H836

vagally induced, role of vasoactive intestinal polypeptide, H1939

ventricular

changes in excitability of ventricular muscle cells, role of inward rectifier, model study, H1181

defibrillation threshold determination, epicardial potential gradient field, H2336

during myocardial ischemia, effects of intra- and extracellular acidosis on inward Na+ current, H1749

during myocardial ischemia, role of thrombin receptor activation and lysophosphatidylcholine, H1740

from ischemia and reperfusion, effects of estrogen, H2569

reperfusion fibrillation from O2-derived free radicals in dogs, H295

stretch-induced, role of Ca2+ and Na+ influx, H1803

Arsenite

effects on cystine transport and glutathione levels in alveolar type II cells,

Arterial oxygen saturation

in hypoxic fetus, placenta, and uterus, R303

Arteries

see also Baroreceptor reflexes; Blood pressure; Resistance arteries; Muscle, smooth; and specific

arcuate preglomerular, autoregulatory responses, effects of cGMP-dependent dilators on, F338

baroreceptors

role in renal sympathetic nerve activity in cirrhosis, R117

vs. cardiac baroreceptors, magnitude of impairment in cardiac failure,

chemo- and baroreceptors, effects on parabrachial nucleus, R707

analysis of seven methods for estimating based on windkessel models, H1540

and baroreceptor reflexes, in athletes and hypertensives, H411

vascular sympathetic tone effects on arterial mechanics, H794

conduit: aorta, properties of hypertension-induced humoral factors, H767 cytokine production, effects of aging and endotoxin, H2288

insufficiency

collateral and microvascular adaptation and effect of exercise training,

physical training effects on collateral blood flow in aged, H1174

internal mammary, inducible L-arginine/nitric oxide pathway, H1122

large, remodeling after myocardial infarction and effects of captopril, H2092

oxygen saturation, in acute plus chronic hypoxemia, H974

parametrial, blood flow velocity, sex hormone effects on in pregnancy, R614 pressure-flow relations, role of calcium

channels in vascular waterfall, H371

small precapillary, study of pressurized vs. wire-mounted preparations,

small subcutaneous, intracellular pH control and relation to tension, C580

smooth muscle potassium channels (review), C799

wall hypoxia at bifurcations: role in atherosclerosis, H155

Arterioles

see also Microvasculature

α-adrenoceptor constriction, effects of acidosis and hypoxia, H2068

afferent renal, vasoconstrictor response to ATP, role of calcium influx, F876 cerebral, responses to hypoglycemic hy-

poxia in newborn and role of adenosine, H871

coronary

α-adrenergic constriction vs. metabolic dilation, effects of endogenous adenosine, H2487

neutrophil-endothelial interactions, H490

within heart muscle, pressure-area relations during diastole and systole, H2531

gap junctional connexin proteins, distribution in smooth muscle and endothelium, H729

gastric submucosal, sensory neuron-induced vasodilation, roles of NO and calcitonin gene-related peptide,

intestinal, endothelial-dependent and -independent vasodilation, in Zucker diabetic rat, H2366

juxtaglomerular afferent, autoregulatory responses, effects of cGMP-dependent dilators on, F338

oxygen tension, vs. venular, and oxygen delivery to tissues, H802

responses to local pressure changes, communication to remote arterioles, H1379

of skeletal muscle, presence of bradykinin B2 receptors and response to bradykinin, H1628

vascular tone, effects of protein tyrosine kinase and platelet-activating factor, H399

Asbestos

pulmonary epithelial cell injury from, role of iron-catalyzed free radicals and DNA strand breaks, L471

Ascorbate

osteoblastic uptake and steady-state levels, role of TGF-B and Na+-ascorbate cotransport, E565

Ascorbic acid

sodium-dependent transport requirement in osteoblasts, C1430

Asialoglycoprotein receptor role in hepatic recognition of galactosylated proteins, G849

Aspartate aminotransferase rate of chemical flux catalyzed by, method for estimating, E397

Aspirin

chronic doses, gastric mucosal adaptation to, G134

effects on cerebral microvascular cyclooxygenase activity, H458 and insulin-induced release of plasminogen activator from platelets, H117

Asthma

airway hyperreactivity, role of myosin light-chain kinase activity, L739

- airway smooth muscle cell proliferation, vasoactive intestinal peptide effects on, L1047
- cultured airway myocytes for airway smooth muscle studies (review), L1
- glucocorticoid effects on pulmonary β<sub>2</sub>adrenoceptor transcription rate, L41
- increased muscarinic receptor expression in Basenji-greyhound dog, L935
- interleukin-8-induced transcellular eosinophilic chemotaxis, L117
- possible chromosomal linkage of human CC10 gene, L565
- simultaneous study of chemoattraction and bronchoconstriction in guinea pig tracheal explants, L446
- subepithelial connective tissue deposition in, and neuropeptide effects on lung fibroblasts, L278

#### Astrocytes see Brain, astrocytes Astroglia, see Brain, astroglia Atherogenesis

- and impaired postprandial adipose tissue triacylglycerol clearance in obesity, E588
- role of fibrin and fibrinogen effects on endothelium-derived relaxing factor production, C520

#### Atherosclerosis

- cell migration in, role of thrombin and urokinase receptor, C1195
- and effect of bifurcation on artery wall oxygenation, H155
- effects on venous smooth muscle cell contractile function and ion channels, H2522
- kinetics and uptake of oxidized chylomicrons, G709
- mechanisms of potassium's protective effects (review), R825
- role of 15-lipoxygenase, study with interleukin-4-treated human monocytes, C1301
- smoking as risk factor, role of hydrogen and lipid peroxides in platelet hyperactivity, H679
- solvent drag and sieving in LDL crossing of high-permeability microvessel endothelium, H1982
- vascular smooth muscle cell proliferation, inhibition by monocyte chemoattractant protein 1, H1021

#### Athletes

- baroreflex changes in, role of arterial compliance, H411
- elderly, waist-to-hip ratio and enhanced insulin sensitivity, E484

#### Atopy

- possible chromosomal linkage of human CC10 gene, L565
- Atrial natriuretic peptide (factor) analysis of ANP-secreting atrial cardio-
- cytes, H265 and atrial right and left distension effects in pregnancy, R1411
- cardiovascular effects in eels, R1273 chloride channel activation, in proximal convoluted tubule, role of cGMP, F323
- effects on angiotensin II-mediated phosphatidylcholine hydrolysis, C376

- effects on capillary permeability to protein, H1139
- effects on kidney, changes during pregnancy, F416
- expression and secretion by cardiomyocytes, effects of 1,25-dihydroxyvitamin D<sub>3</sub>, E1108
- fetal levels after hypoxemia from reduced uterine blood flow vs. maternal N<sub>2</sub> inhalation, F868
- levels in cardiac hypertrophy, H781 mRNA levels and distribution in hypertrophied right ventricle, H162
- osmolality-stimulated secretion, role of calcium and sodium ions, E476
- in plasma, effects of head-out immersion in water, R583
- presence in and secretion from aortic endothelial cells, H921

#### release

- effects of hypoxia, ischemia, and temperature, H2352
- interaction of left atrial stretch and cardiac sympathetic activation, H1405
- role in renin regulation during heart failure, H2281
- secretion by atrial myocytes, autocrine/ paracrine autoregulation, E428
- secretion, roles of atrial stroke volume and extracellular fluid shift, R1129 secretion, small cell lung cancer cell line as model, H1869
- transport inhibition in proximal nephron, role of angiotensin II, F730 ventricular synthesis during congestive
- heart failure, H391

  Atrial natriuretic peptide receptors

  ANP-C, role in C-type natriuretic pen-
- ANP-C, role in C-type natriuretic peptide actions, C978 ANPR-A, role in cGMP production and
- ANP secretion, E428 gene expression in lung, effects of hy-

# poxia on, L328 Atriopeptin, see Atrial natriuretic peptide

# Atropine

- effects on carbachol-induced pancreatic goblet cell degranulation, G24
- effects on nasal gland acinar cell [Ca<sup>2+</sup>], response to acetylcholine, L361
- effects on veratridine-evoked pancreatic amylase secretion and c-fos expression, G339
- effects on volume and rhythm of pancreatic enzyme secretions, G251

# **Auditory system**

mechanotransduction in hair cells: stereociliary bundle structure and function (review), C1

# Autoimmune inflammatory disorders

Graves' ophthalmopathy, role of leukoregulan-induced hyaluronan synthesis, C382

#### Autonomic nervous system

- amygdalar interoceptive, exteroceptive, and CNS input and integrative functions, R666
- cardiovascular responses to visceral afferent stimulation after cord transection, H2077
- central control abnormalities in left ventricular dysfunction, H218
- control of cardiovascular functions during cardiopulmonary bypass, H2329

- in control of heart rate, changes in left ventricular dysfunction and heart failure, R310
- and effects of aging on heart rate, heart rate variability, and AV conduction, H1441

# heart rate control

- in complete vs. incomplete quadriplegia, effects of provocative maneuvers, H2239
- time domain characterization using autoregressive moving average analysis, H2232
- nucleus tractus solitarius neurons, effects of L-NAME on, R487
- role in cardiovascular response to hemorrhage, effects of hypertension on, H2302
- role in glucose homeostasis after hyperglycemia, R475
- vascular resistance and arterial pressure oscillations in anesthetized dog, H7
- in Wistar and spontaneously hypertensive rats, insular cortex-mediated responses, R214

#### Autonomic nervous system neuropeptides

role in immune system development and homeostasis, E168

#### Autoregulation

#### see also Kidney, tubuloglomerular feedback

- of coronary resistance vessel diameter, role of myogenic mechanisms, H788
- in preglomerular vasculature, interaction with cGMP-dependent dilators, F338

#### Avian nasal salt gland cells

naive vs. fully differentiated, muscarinicactivated pH; changes, C944

#### E

#### Baclofen

effects on neuronal activity in rostral ventrolateral medulla, R428

#### Bacteremia

gram-negative, hepatic TNF-α expression from, effects of hypoxia-reoxygenation, G311

#### Bacteria

phagocytosis by alveolar macrophages, effects of surfactant protein A and endotoxin, alone and combined, L144

## Barium chloride

effects on basolateral membrane potential, and cellular  $P_i$  levels, F375

## Barium ion

- blockade of renal tubular K channels, effects on tubuloglomerular feedback, F960
- reabsorption in proximal convoluted tubule and effects on potassium reabsorption, F778

## Baroreceptor reflexes

#### arterial

- attenuation by exercise training, mechanisms involved, H662
- and cardiopulmonary baroreflex control of renal sympathetic nerves, effect of dietary sodium, H61

Baroreceptor reflexes (continued)

and cardiopulmonary baroreflex responses to volume expansion in newborn, H1343

impairment in left ventricular dysfunction, H218

arterial and cardiopulmonary

effects on responses evoked from caudal raphe nuclei, R1295

role in renal nerve activity in cirrhosis, R117

and arterial compliance, in athletes and hypertensives, H411

arterial vs. cardiac, magnitude of impairment in cardiac failure, R112

attenuation by vena caval occlusioninduced hypotension, R859

baroreceptor-heart rate reflex, aging effects on, studies in ambulatory humans, H1606

cardiac, measuring sensitivity from blood pressure and heart rate using statistical dependence, R382

cardiopulmonary, renal sympathetic control by,

age-related changes, H1343 effect of sodium on, H61

cardiorespiratory control abnormalities in left ventricular dysfunction, H218

carotid, control of heart rate, modulation by cardiopulmonary baroreceptors, effects of exercise, H1567

carotid-cardiac baroreflex latency, effects of exercise on, H1208

central respiratory drive effects on barosensitivity of rostral ventrolateral medulla, R909

hyperglycemia-induced changes, glutathione effects on, E1167

impaired, and hemodynamic responses to vasopressin during  $V_1$  receptor blockade, R156

and L-NAME effects on nucleus tractus solitarius, R487

nitric oxide effects on, R958

role in pulmonary circulation control, effects on pulmonary vs. renal sympathetic nerve activity, R1078 spontaneous

assessment by surrogate data analysis, H1682

phase relationship change during lower body negative pressure, H1688

and synchronization of cardiac-related sympathetic discharges, R1472

Baroreceptors

arterial, role in cardiovascular effects of area postrema stimulation, H1086 cardiopulmonary

circulatory and muscle sympathetic nerve responses to head-down tilt,

interaction with carotid baroreflex control of heart rate, effects of exercise, H1567

role in thirst attenuation during headout immersion in water, R583

peripheral, effects on parabrachial nucleus, R707

renal, role in effects of vertebral arteryinfused angiotensin II, F296 resetting during hypotension, role of viscoelasticity, H1773

in right heart, effects of loading and unloading on vasopressin, ACTH, and renin secretion, R1069

stimulation, amygdalar responses to, R666

Baroregulation

vasopressin response to sustained hypovolemia, role of adaptive resetting of volume control mechanism, R349

**Barrier function** 

see also Permeability

in distal colon, time course of disruption and recovery during colitis, G622

of pulmonary artery endothelial cells, mechanisms of disruption by pertussis toxin, L926

of pulmonary capillary endothelial cells, role of actin microfilaments, L753

of tight junctions, intestinal, enteropathogenic *E. coli* effects on, G374 of tracheal epithelium, oxidant effects on permeability and repair, L284

Basal metabolic rate, see Metabolic

Basic amino acid transporter, mouse and system y<sup>+</sup> transport of arginine by Caco-2 cells, changes with differen-

tiation, G578 Basic fibroblast growth factor

effects on indomethacin-delayed gastric ulcer healing, G276

and its receptor, gene expression in lung after 85% O<sub>2</sub>, L455

role in hypoxia-stimulated capillary network formation in lung microvessel endothelial cells, L789

Basic fibroblast growth factor receptors

expression and functionality in adult cardiomyocytes, H1927

Basic medical sciences

student checklist for analysis of published papers, S21

**Basilar** artery

estimation of laser-Doppler flux biological zero, H213

Bcl-2 oncogene

absence-induced metanephric apoptosis and kidney maldevelopment, F73

Becker muscular dystrophy

prednisone effects on protein metabolism, E67

Behavioral arousal

amygdalar interoceptive, exteroceptive, and CNS input and integrative functions, R666

Belching

nasopharygeal closure, mechanism and timing, G1037

Betaine

osmotic regulation, F983

Bicarbonate

<sup>13</sup>C-labeled, use for measuring CO<sub>2</sub> production, E1123

effects on amiloride-sensitive and -insensitive short-circuit currents in renal epithelial cells, C762

proximal tubular reabsorption, and pH<sub>i</sub> regulation mechanisms, F179, F193

renal sodium-bicarbonate cotransporter, role of G proteins in regulation, F461 role in pH<sub>i</sub> control, C580 transport in loop of Henle, role of adre-

nal steroids, F234
Bicarbonate ion secretion

jejunal, in CF vs. normal mice, G505 serosal, mechanisms of gastric protection. G496

Bile

excretion of hepatic lysosomal organic cations, G480

presence of insulin-like growth factor but not its binding proteins, R266

Bile acids

effects on DNA synthesis in regenerating liver, G1051

effects on hormone-induced cAMP production in non-liver cells, G908 facilitation of protoporphyrin excretion

facilitation of protoporphyrin excretion, G754 hepatic organic anion uptake systems

basolateral dicarboxylate/cholate antiport system, G797 in skate, G18

hepatocyte apoptosis from, role of serine protease translocation to nucleus, G613

metabolism, postnatal maturation, triiodothyronine effects, E889

suppression of hepatocellular cAMP synthesis, role of PKC, G300

transport

across trophoblast from fetus to maternal blood, G685

sodium-taurocholate cotransport in hepatocyte, effects of prolactin, G11

**Bile ducts** 

resection, cholestasis from, hepatic opioid mRNA expression, G346

Bile salts

lovastatin effects on hepatic metabolism in rat, G242

**Biochemistry** 

teaching of principles as chemical flow systems, S40

Biomarkers

for normal aging and age-related pathologies, use of serum protein patterns, R536

Birth

see also Newborn

corticosteroid effects on free vs. sulfoconjugated catecholamines, in fetus vs. preterm newborn, E28

febrile response to E. coli endotoxin in maternal rat, R919

intrahypothalamic release of oxytocin and vasopressin, functional consequences and controversies (review), E537

mechanism of postpartum umbilical artery vasospasm, H202

Bladder, see Urinary bladder Blood clotting

and  $\alpha_2$ -macroglobulin gene expression during hibernation in ground squirrel, R1507

hypercoagulation after hemorrhage, possible role of plasminogen activator inhibitor-1, E1065

Blood flor

see also Extracorporeal circulation; Hemodynamics; Shear stress; and specific site

artery wall hypoxia at bifurcations: role in atherosclerosis, H155

in cerebellar parallel fibers, neurally activated functional hyperemia, role of NO, R1153

collateral

effects of physical training, in peripheral arterial insufficiency, H1174

microvascular adaptation to arterial insufficiency and effect of exercise training, H125

and determinants of maximal oxygen uptake during single-leg knee extension exercise, H1453

distribution, peripheral and visceral, sex differences in, R66

effects on muscle glucose uptake and metabolism during hypoglycemia, E248

erythrocyte flow dynamics in microvessels, effects of erythrocyte aggregation, H1959

in gastric ulcer margin, tobacco vs. nontobacco smoke effects on, G153

in muscle, metabolic effects of local epinephrine infusion, E55

myocardial transmural distribution bioenergetic responses to progressively higher workloads, H1891 effects of endothelin vs. stenosis,

H1276

in hypoperfusion, effects of endothelin vs. adenosine, H1284

patterns in ischemic myocardium, and heterogeneous hypoxic areas, H2183

pressure-flow relations, role of calcium channels in vascular waterfall, H371

regional

in endotoxic shock, effects of antioxidant U-74006F, H1847

fractal analysis in skeletal muscle and myocardium, H112

systemic and regional, in acute plus chronic hypoxemia, H974

to muscle, nutritive vs. nonnutritive, role in control of muscle metabolism (review), E797

transmitral and pulmonary venous, mathematical model for flow velocity patterns, H476

velocity, in parametrial artery, sex hormone effects on in pregnancy, R614

velocity profiles and effective viscosity in low-shear tube flow, H25

volumetric, in rat mesenteric artery and aorta, assessment of transit-time ultrasound 1- and 2-mm probes, H1368

**Blood** pressure

see also Hemodynamics; Hypertension; Baroreceptors

adrenomedullin actions in conscious sheep, H2574

after brain injury following cocaine use, H68

aortic, effects of vasotocin, atrial natriuretic peptide, and epinephrine in eels, R1273

arteria

effects of long-term endothelin infusions, R375 effects of long-term endothelin infusions, role of renin-angiotensin system, R395

and heart rate, use to determine cardiac baroreflex sensitivity by statistical dependence, R382

baroreceptor reflexes and arterial compliance in athletes and hypertensives, H411

carotid baroreflex control, modulation by cardiopulmonary baroreceptors, effects of exercise, H1567

and central nervous system potassium homeostasis, H646

homeostasis, H646 changes in, effects on ventral medullary brain surface, R324

effect on NPY/NPY Y<sub>1</sub> receptor/G protein complex in rat brain cortex, R192

effects of area postrema stimulation and changes with anesthesia, H1086

effects of cuneiform nucleus stimulation, R752

effects of  $GABA_A$  receptor blockade in hypothalamic dorsomedial nucleus, G514

effects of intrarenal adrenomedullin infusion, F657

effects of L-162,313, a nonpeptide angiotensin II mimic, R820

effects of vertebral artery-infused angiotensin II, F296

effects on cerebral blood flow cycling, H569

effects on sympathoexcitatory influence of raphe-spinal pathway, R1230 femoral arterial, and effects of aging on

vasoreactivity, in beagle, H92 fetal, after hypoxemia from reduced uterine blood flow vs. maternal N<sub>2</sub> inhalation, F868

in fetus, after carotid occlusion, and immaturity of vagal afferent buffering systems, R343

fluctuations

in sleep apnea, relation to heart rate oscillations, role of carotid body chemoreflex, H2145

spontaneous, in anesthetized dog, H7 insular cortex-mediated autonomic responses in Wistar and spontaneously hypertensive rats, R214

local changes in arterioles, communication to remote arterioles, H1379 long-term regulation, hormonal-sympa-

thetic interactions, R1343 maintenance during cardiopulmonary bypass, H2329

nonlinear chaotic dynamic aspects, H621 potassium channels in arterial smooth muscle (review), C799

pressor responses from muscle metaborefles, effects on muscle blood flow 1980

regulation, role of sympathetic function in antihypertensive effect of vasopressin withdrawal, H1

renal regulation, intrarenal regional blood flow and renal perfusion pressure, F404

responses evoked from caudal raphe nuclei, R1295

responses to visceral afferent stimulation after cord transection, H2077 systolic, in spontaneous baroreflex, beatby-beat interactions with heart rate, H1682, H1688

time- and dose-related effects of indomethacin or meclofenamate, F468

vascular compliance and mean circulatory filling pressure in fish and effects of ACE inhibitor, H1814

Blood rheology

changes from sickling, roles of hemoglobin polymerization and membrane defects, H2003

erythrocyte flow dynamics in microvessels, effects of erythrocyte aggregation, H1959

myocardial tissue hematocrit gradient: effect of erythrocyte deformability, H260

velocity profiles and effective viscosity in low-shear tube flow, H25

**Blood substitutes** 

human recombinant hemoglobin, chest pain from, possible role of nitric oxide scavengers, G443

**Blood** volume

homeostasis, roles of plasma vs. urinary endothelin-1, H1829

restoration after hemorrhage, role of intestinal food and water, R715

**Blood-brain barrier** 

Na-K-Cl cotransport in cerebral vascular endothelial cells and effects of astrocytes on, C747

permeability to glucose and ketone bodies during starvation, E1161

Blood-nerve barrier

permeability, relation to hyperglycemia and mast cell degranulation, H740

Body composition aging effects on, E1083

importance of body density and total body water in body fat estimates, E153

roles of dietary fat and protein levels vs. genetics, R658

Body fat, see Fat, body; Adipose tissue Body mass

relation to metabolic rate, allometry in mouse, rat, rabbit, sheep, and cattle liver and kidney, R641

**Body mass index** 

relation to skeletal muscle fiber composition and insulin-induced glucose transport, E453

Body size

effects on pharmacokinetics and pharmacodynamics of renally excreted muscle relaxant metocurine, R85

Body surface area

adjusting for, in hemodynamics studies, superiority of regression over indexing, R978

Body temperature, see Temperature, body; Thermoregulation Body water compartmentation

baroreflex responses to volume expansion in newborn and age-related changes, H1343

Body weight

effects of human satietin in rats, R1 electromagnetic field effects on, variability in weight vs. changes in mean weight, R1013 Body weight (continued)

glucocorticoid and insulin reciprocal effects, R142

Bombesin

effects on pancreatic goblet cell degranulation, G24

gastric acid secretion from, inhibition by gastrin monoclonal antibody, G54

Bombesin receptors

in regulation of pancreatic goblet cell degranulation, G24

Bone

osteoblastic vs. osteoclastic calcium efflux, effects of metabolic vs. respiratory acidosis, C80

osteoblasts

ascorbate uptake and steady-state levels, role of TGF-β and Na\*-ascorbate cotransport, E565

requirement for sodium-dependent ascorbic acid transport, C1430

signal transduction and cell-matrix interactions, role of type I collagen, C1090

osteoclasts

calcium receptors on, caffeine effects on, F447

osteocytes

role in osteogenic response to mechanical stimulation, E318

osteogenic response to mechanical stimulation, IGF-I mRNA expression, E318

osteopetrosis, mineral homeostasis in, E312

 $\begin{array}{c} \textbf{perichondrial localization of endothelin} \\ ET\text{-}1/ET_A \ \textbf{receptor system, C496} \end{array}$ 

Bosentar

effects on pulmonary vascular reactivity to endothelins and protection from pulmonary hypertension, H828 hemodynamic and biochemical effects,

H432 Botulinum C<sub>2</sub> \*oxin

pulmonary edema from, role of endothelial cytoskeleton, L753

**Brachial** artery

flow-mediated vasoactivity, study by high-frequency ultrasound, H1397

Bradykinin

cerebral vasodilation from, sites of cyclooxygenase mediator, H458

desensitization of coronary artery endothelium-dependent responses, role of cGMP, H865

effects on endothelium-dependent responses in fetal pulmonary arteries vs. pulmonary veins, H1586

effects on pancreatic insulin release, E1027

gallbladder stimulation by, role of spinal tachykinin receptors in resultant cardiovascular reflexes, H526

role in regulation of skeletal muscle arteriolar tone, H1628

Bradykinin receptors

B<sub>2</sub>, presence in skeletal muscle arterioles, H1628

Brain

see also Blood-brain barrier; Hypothalamic-pituitary-adrenal axis; Cerebral entries

amygdala, interoceptive, exteroceptive, and CNS input and integrative functions, R666 amygdalar central nucleus, ibotenic acid destruction of neuronal perikarya, effects on later hypertension in SHR, R1171

angiotensin II, role in cardiovascular, vasopressin, and renin responses to hemorrhage, R1500

area postrema, stimulation, sympathetic responses and effects of anesthetics, H1086

astrocytes

effects on Na-K-Cl cotransport in cerebral vascular endothelial cells, C747 human immunodeficiency virus gp120

activation of large-conductance K+ channels, C1440

interferon-γ-induced MHC class II gene expression in, C127

astroglia

endotoxin- and cytokine-induced nitrite formation in, effects of angiotensin II, C700

glucose uptake, angiotensin II-stimulated, pathway involved, E384 oxytocin receptors in, agonist-induced

downregulation, C413 blood flow and oxygenation in acute plus

chronic hypoxemia, H974 brain stem nuclei, peptide YY injection, induction of vagal stimulation of gastric acid secretion, G943

brain stem projections required for vestibulosympathetic or vestibulorespiratory responses, R1381

capillary blood flow, response to hypotension and intracranial hypertension, H2202

caudal hypoglossal nucleus, effects of intracerebroventricular angiotensin III and role of angiotensin receptor AT<sub>1</sub>, R1242

caudal ventrolateral medulla, vs. caudal raphe nuclei, depressor and sympathoinhibitory effects, R1295

cerebellar parallel fibers, role of NO in neurally activated functional hyperemia, R1153

cerebral cortex, neuropeptide Y/NPY Y<sub>1</sub> receptor/G protein complex, R192

commissural subnucleus of nucleus tractus solitarius responding to carotid body stimulation in rat, R851

communication with immune system, vagotomy effects on induction of brain IL-1β mRNA by peripheral endotoxin, R1327

cuneiform nucleus activation of rostral ventrolateral medullary sympathoexcitation, R752

dorsal motor nucleus of vagus effects of serotonin alone and with thyrotropin-releasing hormone, G292

integration of vagal and spinal input from GI tract, G780

and peptide YY effects on gastric acid

G548

secretion, G943 thyrotropin-releasing hormone in, role in kainic acid gastroprotection,

dorsal vagal complex, role in control of digestion (review), G1

glucose utilization rates in active and hibernating squirrels, R445 hyponatremic encephalopathy, effects of age, gender, vasopressin, and gonadal steroids on survival, R1143

hypothalamic nuclei

dorsomedial, GABA<sub>A</sub> receptor blockade, intestinal motility from, G514 interferon-α injection, effects on natural killer activity in spleen, R1406

paraventricular nucleus, norepinephrine release in DOCA rats vs. SHR,

H1549 supraoptic and paraventricular nuclei,

vasopressin and oxytocin release in (review), E537 ventromedial nucleus, effects of para-

ventromedial nucleus, effects of parathyroid hormone on, R21

hypothalamoneurohypophysial system and water intake, regulatory role of plasma osmolality vs. sodium levels in rat, R651

hypothalamus

cold exposure and secretagogue-induced changes in serum prolactin and growth hormone, E758

prostaglandin production, suppression by cholestasis and effects on IL-1induced ACTH release, G404 serotonin depletion, effects on strepto-

zotocin-induced diabetes, E839 hypothalamus, brain stem: angiotensin II type 2 receptor fragment effects on delayed rectifier K<sup>+</sup> current, C278

injury

after cocaine use, posttraumatic blood pressure and cerebral blood flow, H68

bradykinin-induced cerebral vasodilation from, sites of cyclooxygenase mediator, H458

insular cortex, autonomic responses in Wistar and spontaneously hypertensive rats, R214

intracellular pH after hypercapnia in two lizard species, R889

intracortical neuronal networks generating medulla- and cerebellum-evoked vasodilation, R454

inward rectifying K<sup>+</sup> channels, human homologue (HHBIRK1), cloning and stable expression, H506

ischemia, lactic acid-induced delayed neuronal death in, role of intracellular calcium, R506

lipid peroxidation and manganese superoxide dismutase, effects of chronic hypertension, H1418

5-lipoxygenase translocation and leukotriene  $C_4$  production during postischemic reperfusion, H1249

locus ceruleus, and effects of REM sleep deprivation, R1456

medulla, ventrolateral and dorsomedial vasomotor neurons, distribution and reactivity in hypertensive rats, H1499

medullary A1 noradrenergic cell group, role in vasopressin response to hypovolemia in rat, R1336

muscarinic receptors, kinetic analysis, R1491

neuroactive steroids, dehydroepiandrosterone effects during sleep in humans, E107 norepinephrine metabolism and proneness to diet-induced obesity, R389 nucleus raphe obscurus, role in pancreatic hormone secretion, E1128

nucleus tractus solitarii

food-induced activation, gastrointestinal origin of activating cues, R223

and gestational effects on volume-sensitive cardiopulmonary receptors, R736

and integration of visceral input in dorsal motor nucleus of vagus, G780 N<sup>G</sup>-nitro-L-arginine methyl ester effects on, R487

role in vagovagal reflex control of digestion, G1

organum cavum prelamina terminalis, angiotensin receptor subtype in, and angiotensin II-induced thirst, R1401

parabrachial nucleus

effects of lesions on feeding response to 2,5-anhydro-D-mannitol, R676 responses to peripheral chemo- and baroreceptor inputs, R707

visceral afferent transmission, neuropeptide and neurotransmitter interactions, R786

pial arteriolar vasodilation

cyclooxygenase-mediated, bradykinininduced, effect of aspirin, H458

endothelium-dependent, after injury, role of protein synthesis in, H512 iloprost-induced dilation, indomethacin effects on, H1884

pial vasodilation in newborn β-adrenoceptor-induced, role of NO, cAMP, and cGMP, H1071

hypoxic, effects of opioids and NO, H226

prostaglandin-induced, role of NO and cyclic nucleotides, H1436

pial vein, cAMP synthesis, and novel 5-HT<sub>1</sub>-like receptor in pig, H1383 pinealocytes, adenosine and guanosine

3',5'-cyclic monophosphates in, role of phosphatase in regulation, E458 potassium homeostasis, and hyperten-

sion in DOCA rats, H646 protein synthesis and recycling of leucine, age-related changes, R549

raphe nuclei caudal to obex, depressor and sympathoinhibitory effects, R1295

raphe nuclei, role in vagovagal reflex control of digestion (review), G1

raphe obscurus, sympathoexcitatory influence of raphe-spinal pathway, R1230

raphe pallidus, kainic acid excitation, gastroprotective effect, role of medullary thyrotropin-releasing hormone, G548

respiratory nuclei

R272

connections with sleep-causing pontine reticular regions, L251 muscarinic receptor subtypes, L941

rostral ventrolateral medulla γ-aminobutyric acid class B receptors, effects on neuronal activity, R428

barosensitivity, effects of central respiratory drive on, R909 neuronal activation by angiotensin II,

nitric oxide effects on, R958

role in tricyclic antidepressant sympatholytic effect, R1429

and vestibulosympathetic reflexes, R1381

striatum, vs. renal proximal tubule, fenoldopam effects on protein phosphatase 1, F279

subfornical organ, paraventricular nucleus, spinal cord pathway, R625 supraoptic nucleus, synaptic connection with anterior hypothalamus and

vasopressin release, R1034 temperature, effects of ambient temperature during sleep, R1365

thirst mechanisms, effects of ethanol drinking, R1526

in turtle, upregulation of GABA<sub>A</sub>/benzodiazepine receptor during anoxia, R1332

ventral medullary surface, regional responses to pressor and depressor stimulation, R324

ventrolateral medulla, role in reflex cardiovascular responses to skin and muscle nerve activation, R1464

Brain natriuretic peptide mRNA levels and distribution in hyper-

trophied right ventricle, H162 Branched-chain ketoacid dehydroge-

in muscle, increase with extracellular acidemia, C1395

**Branchial shunting** 

effects of vasotocin, atrial natriuretic peptide, and epinephrine in eels, R1273

Branchial vasculature

of fish gill, arterioarterial and arteriovenous, response to hypoxia, R771

Breathing, see Respiration BRL-35135 (B-adrenoceptor agonist) effects on obesity development in suckling Zucker rats, E1039

BRL-35135 (β<sub>3</sub>-adrenergic agonist) metabolic and antidiabetic effects in obese mice, E678

BRL-47672 (morpholine compound) effects on skeletal muscle growth and β<sub>2</sub>-adrenoceptors, E159

5-Bromo-2'-deoxyuridine

effects on normal vs. glucocorticoid-accelerated intestinal maturation, G139

8-Bromoadenosine 3',5'-cyclic monophosphate

stimulation of angiotensinogen gene expression, R105

8-Bromo-guanosine 3',5'-cyclic monophosphate

inhaled, use for selective pulmonary vasodilation in pulmonary hypertension, H2056

Bromosulfophthalein

chloride-dependent hepatic uptake in skate, G18 hepatic uptake, oxidase-induced

changes, G47

Bronchi

see also Muscle, smooth distal small, transepithelial Cl<sup>-</sup> secretion and submucosal gland number,

epithelial cells

cigarette smoke effects on migration and matrix attachment, L723 cytokine-induced superoxide dismutase effects on later oxidant exposure, L71

fibronectin production, effects of insulin, L230

stimulatory effects of hepatocyte growth factor and changes in neoplasia, L1012

virus effects on migration and matrix attachment, L214

hypoxia-induced relaxation, role of Ca<sup>2+</sup> entry inhibition, L201

muscarinic receptor subtype distribution and effects on adenylyl cyclase, L101

parasympathetic ganglia, antigen effects on, role of histamine  $H_1$  receptors, L879

role of cyclooxygenase products in neuroeffector control and airway hyperresponsiveness, L47

Bronchial asthma, see Asthma Bronchioles

transepithelial Cl<sup>-</sup> secretion and submucosal gland number, L526

Bronchitis

viral, re-epithelialization after, virus effects on epithelial cell migration and matrix attachment, L214

Bronchopulmonary dysplasia

pH-sensitive liposomes for antioxidant delivery to type II cells, L374

Brown fat cells, see Adipocytes, brown Brown fat, see Adipose tissue, brown Brush-border membranes, see Membranes, brush-border

Brushite

crystal adhesion to renal epithelial cells, inhibition by urinary anions, F604

Buffers

interstitial, role in gastric mucosal oxyntic cell pH<sub>i</sub>, G496

intracellular, in proximal tubule S3 segment, F179, F193

Bumetanide

effects on distal airway short-circuit current, relation to submucosal gland number, L526

Burns

effects of hypertonic saline-dextran therapy on cardiac contractility and hemodynamics, H856

(R,S)-1,3-Butanediol acetoacetate esters

as potential nutrients, metabolism in pigs, E660

Butyrate

as possible cystic fibrosis therapy by inducing overexpression of  $\Delta F508$  mutant, L615

Byssinosis

tannin effects on cAMP production and adenylate cyclase in airway epithelial cells, L851

tannin-mediated calcium influx in alveolar macrophages, and arachidonic acid release, L33

C

Cachexia

cancer-associated, muscle proteolysis in, role of ATP-ubiquitin-proteasome pathway, E996 Caerulein

effects of supramaximal doses on pancreatic acinar cell cytoskeleton, G328

Caffeine

effects on calcium receptors and [Ca<sup>2+</sup>]<sub>i</sub> in osteoclasts, F447

effects on cardiac myofilaments, non-role of Ca<sup>2+</sup> binding to troponin C, C1348

effects on norepinephrine kinetics, fat oxidation, and energy expenditure in elderly, E1192

Cage mechanism

in peroxynitrite chemistry, L699 Calcitonin gene-related peptide

accumulation and activity in experimental neuroma, H584

and dehydroepiandrosterone, effects on thymocyte proliferation, E168 effects on human lung fibroblast prolif-

eration and chemotaxis, L278
effects on visceral afferent transmission

through parabrachial nucleus, R786 interaction with NO in sensory neuroninduced gastric vasodilation, G791

Calcium channels

see also Cystic fibrosis transmembrane conductance regulator

in boar sperm plasma membrane, characteristics and role in acrosome reaction, C1284

cardiac, roles of  $\alpha_{1C}$ - and  $\beta$ -subunits in channel-gating behavior, C732

and effects of acidosis and hypoxia on arteriolar α-adrenoceptor constriction, H2068

L-type

and current-induced early afterdepolarizations in ventricular myocytes, H2440

presence at renal resistance artery bifurcations, hemodynamic role, F251

role in Ca<sup>2+</sup> overload in cardiomyopathy, H999

role in cyclic nucleotide-induced airway smooth muscle relaxation, L407

L-type and T-type, role in potassiuminduced aldosterone secretion, C985

in myometrial cells, effects of estrogens on, C64

in pancreatic β-cells, effects of hypoglycemic agent A-4166 on, E185 in portal vein smooth muscle cell.

changes in atherosclerosis, H2522 role in endothelin-3-induced vasopressin secretion, E467

role in mechanisms of mesothelial cell Ca<sup>2+</sup> mobilization, L63

role in phenylalanine-induced intestinal cholecystokinin secretion, G90

role in smooth muscle stretch-activated phospholipase C activity, C458

role in vascular waterfall pressure-flow relations, H371

in skeletal muscle sarcoplasmic reticulum, activation by cyclic ADP-ribose and related agents, C1235

β-subunits, characterization in distal convoluted and connecting tubules, F525

in thin ascending limb of Henle's loop, F1148 voltage-dependent

and hypoxic and hypercapnic airway smooth muscle relaxation, L207 role in hypoxia-induced airway smooth

muscle relaxation, L201

role in parathyroid hormone-induced rise in [Ca<sup>2+</sup>]<sub>i</sub> in proximal tubule cells, F330

serotonin effects in aortic smooth muscle cells, H544

in tracheal smooth muscle, effects of volatile anesthetics, L187

in tracheal smooth muscle, pH<sub>i</sub> effects on, role in CO<sub>2</sub> regulation of airway tone, L642

voltage-gated L-type, role in renal afferent arteriolar vasoconstriction from ATP, F876

Calcium chelators

effects on mitochondrial permeability transition, C676

Calcium currents

in cardiomyocyte sarcoplasmic reticulum  ${\rm Ca^{2+}\ load/gain\ relationship,\ H916}$ 

L-type

asymmetry during action potential conduction between adjacent ventricular cells, H2476

IL-1 $\beta$  suppression in cardiomyocytes, role of G proteins, C339

in sinoatrial node cells, effects of angiotensin II on, H1053

in ventricular myocytes, forskolinstimulated, effects of protein kinase inhibitor H-89, C651

L-type and T-type, serotonin effects in aortic smooth muscle cells, H544 role in Ca<sup>2+</sup> overload in cardiomyopathy, H999

in somatotrophs, effects of growth hormone-releasing factor, E204

in ventricular myocytes

changes during culture, C1002 effects of extracellular magnesium, H2321

effects of nitric oxide on, C45 palmitoyl-L-carnitine effects on, H1027

voltage-gated, effects on aldosterone secretion, C985

Calcium ior

see also Hypercalcemia; Potassium channels, calcium-activated; Chloride channels, calcium-activated

and β-adrenergic receptor subtypes in collecting tubules, F1070

binding to troponin C, non-role in caffeine effects on cardiac myofilaments, C1348

blood levels, effects of parathyroid hormone on, R21

in cardiomyocyte sarcoplasmic reticulum, Ca<sup>2+</sup> load effects on fractional calcium release, C1313

in cardiomyocyte sarcoplasmic reticulum, load/gain relationship, H916

Ca<sup>2+</sup>-free, then high-Ca<sup>2+</sup>, perfusion, effects on cardiac contractility and excitation-contraction coupling, H1061

circulating levels in osteopetrotic rat, E312 cyclopiazonic acid-augmented entry into pulmonary arterial endothelial cells, H138

cytosolic

in cardiac ischemia-reperfusion, beneficial effects of low  $pH_i$ , H1510

in cardiac ischemia-reperfusion, beneficial effects of Na<sup>+</sup>/H<sup>+</sup> exchange inhibition, H1531

and chloride-dependent, osmolalityinduced changes in aldosterone secretion, R8

and early effects of metabolic inhibition on coronary endothelial permeability, H1462

effects of SR-49059 (vasopressin  $V_{1a}$  antagonist) in human vascular smooth muscle cells, H404

mobilization in mesothelial cells, L63 peripheral vs. inner, in airway smooth muscle cells, effects of isoproterenol or caged cAMP photolysis, C771

in platelets, plasmin effects on, C958 role in hypercapnia-stimulated cerebrovascular prostaglandin synthesis, H591

role in phenylalanine-induced intestinal cholecystokinin secretion, G90

role in resting load regulation of vascular sensitivity, C1332 role in secretagogue stimulation of

parietal cell aminopyrine accumulation, G82

in ventricular myocytes, calcium/ calmodulin-dependent protein kinase effects, H703

cytosolic and sarcoplasmic, effects on basal and insulin-stimulated muscle glucose transport, R997

effects of removal on  $pH_i$  in smoothmuscle vs. Chinese hamster ovary cells, C147

effects on cGMP formation in pancreatic acinar cells, G900

effects on injury-associated fatty acid accumulation in proximal tubule cells, F110

efflux from bone, effects of metabolic vs. respiratory acidosis, C80

and electromechanical coupling in arterial smooth muscle excitation-contraction, H74

extracellular and ATP- and UTP-evoked [Ca<sup>2+</sup>]<sub>i</sub>

transients in cortical thick ascending limb, F496

in early insulin stimulus-secretion coupling pathway, role of phospholipase A<sub>2</sub> activation, C181

effects on 8-(4-chlorophenylthio)cAMP-induced Ca<sub>1</sub><sup>2+</sup> increase in cortical collecting duct, F480

and isoproterenol effects on peripheral vs. inner [Ca<sup>2+</sup>], levels in airway smooth muscle cells, C771

role in glucose-induced pancreatic insulin release, E336

role in phospholipase  $A_2$  activation in neutrophils, C138

and hepatocyte death by anoxia or electron transport inhibition, relation to mitochondrial permeability transition, C676 influx

mechanism of entry into epithelial cells, C154

role in actin filament disassembly by Clostridium difficile toxin B, G487 role in renal microvascular response to extracellular ATP, F876

role in stretch-induced ventricular arrhythmias, H1803

structural requisites of inositol 1,4,5trisphosphate, C1485

in tannin-mediated arachidonic acid release from alveolar macrophages, L33

inositol 1,4,5-trisphosphate-induced release, and pathways mediating smooth muscle relaxation, C171

interaction with myofilaments, and cGMP effects on posthypoxic cardiomyocyte relaxation, H2396

intercellular waves, role of inositol trisphosphate diffusion, C1537

intracellular

and activation of sodium/hydrogen exchangers, C283

at cell cycle G<sub>1</sub>/S interface, control by insulin-like growth factor I and c-myb, C856

in Bowman's capsule, effects of endothelin and platelet-activating factor vs. carbachol, F1053

of carotid body glomus cell, response to hypoxia, developmental changes, L801

changes during hypoxic pulmonary vasoconstriction, H301

in cortical collecting duct, effect of prostaglandins on, F145

and dual serotonin effects on Ca<sup>2+</sup> channels in aortic smooth muscle cells, H544

dynamics in thin ascending limb of Henle's loop, F1148

effect of halothane on, L166
effects of anoxia, reoxygenation, hypoxia, and metabolic inhibition,
H1045

and effects of cAMP on Na<sup>+</sup> channels in cortical collecting duct, F480

effects on Na-K-Cl cotransport in cerebral vascular endothelial cells, C747 in endothelial cells, effects of α-thrombin and thrombin receptor-activat-

ing peptide, C36 and G protein-coupled regulation of Na/H exchanger NHE-1, C101

in gastric chief cells, mobilization by nonsteroidal anti-inflammatory drugs, G968

and gastrin-cholecystokinin-B receptors on J.RT3-T3.5 Jurkat cells,

glucose modulation in kidney cells, role of endoplasmic reticulum Ca<sup>2+</sup>-ATPase, F671

intestinal, and E. coli effects on intestinal tight junction barrier function, G374

lactic acid-induced, relation to delayed neuronal death, R506

in lactotrophs, effects of arachidonic acid, E1215

mobilization, and lithium potentiation of angiotensin II-stimulated vasoconstriction, H2009 movement between free cytoplasmic and storage compartments, C503

oscillations in [Ca<sup>2+</sup>], correlation with pulsatile insulin secretion, E282

in osteoclasts, caffe:ne effects on, F447 parathyroid hormone-induced rise, in proximal tubule cells, mechanisms, F330

and postischemic cardiac contraction, H100

relation of peak [Ca]; value and rate of [Ca]; decline, C271

relation to myosin light chain and MLC kinase phosphorylation in arterial tone, H2466

relation to [Na<sup>+</sup>]<sub>i</sub> and cell morphology during cardiomyocyte metabolic inhibition, H1239

role in atrial myocyte contraction, effects of age on, H1195

role in modulation of skeletal muscle K<sup>+</sup> conductance, C490

role in regulation of  $Na^+$ - $P_i$  symport in kidney cells, C741

role in skeletal muscle contracture, C317

role in somatostatin effects on thyroid-stimulating hormone-secreting cells, E558

role of Golgi apparatus in regulation, C1133

in sensitized airway smooth muscle, L739

in skeletal muscle, effects of acidosis on, C55

in submucosal nasal gland acinar cells, acetylcholine-induced responses, L361

swelling-induced rise in nonpigmented ciliary epithelial cells, C721

in sympathetic neurons, effects of muscarinic agonists, C829 in thick ascending limb, ATP- and

UTP-evoked entry, F496 in tracheal epithelium, ozone effects on and mechanisms involved, L558

transients in airway smooth muscle cells (review), L1

vasoreactivity coupling, age-related changes, R1394

in ventricular myocytes, palmitoylcarnitine effects on, H2405

vs. cAMP regulation of Cl<sup>-</sup> conductance, in oviduct of normal vs. cystic fibrosis mice, C708

kinetics in ATP-stimulated resistance arteries, effects of cGMP on, H1223

luminal, role in cyclic ADP-ribose activation of skeletal sarcoplasmic reticulum Ca<sup>2+</sup> release channel, C1235

mobilization by vasopressin-activated receptor in renal medulla, F1198 mobilization in carotid media, genistein

effects on, C1425 and Na<sup>+</sup> entry into distal convoluted

tubule cells, F89 and phospholipase D activation in lacrimal gland acini, C713

regulation in papillary muscle cell, effects of cardiomyopathy, H1875

relation to ATP-induced protein kinase C activity in type II cells, L108 release from sarcoplasmic reticulum, and E-C coupling changes in malignant hyperthermia-susceptible muscle, C1381

role in acetylcholine potentiation of acetylcholine-induced K<sup>+</sup> currents in atrial myocytes, H1322

role in Cl<sup>-</sup> secretion regulation in intestinal goblet cell, C1503 role in endothelin effects on juxtaglo-

merular renin release, F39 role in force activation in smooth

role in force activation in smooth muscle, C237

role in osmolality-stimulated atrial natriuretic peptide secretion, E476

ryanodine-induced release from hepatic microsomes and permeabilized hepatocytes, G1017

site of Na/Ca exchange-dependent Ca compartment, C119

and smooth muscle contraction after acidic ADP, C21

substance P-induced influx in coronary endothelial cells, mechanisms, H962

transepithelial transport in flounder proximal tubule, somatolactin effects on, R577

transient depletion, effect on neutrophilepithelial adherence, C472

Calcium overload

from ischemia-reperfusion, beneficial effects of reduced reflow rate, H2384

Calcium oxalate monohydrate crystal adhesion to renal epithelial cells,

inhibition by urinary anions, F604 Calcium paradox phenomenon

protective role of adenosine, C838 Calcium phosphate

crystal adhesion to renal epithelial cells, inhibition by urinary anions, F604

Calcium receptors in osteoclasts, caffeine effects on, F447

Calcium signaling
in human infant atrial myocytes, effects

in human infant atrial myocytes, effects of age on, H1195

oxidant-inhibited, modulation by glutathione peroxidase reductant substrate, H278

role in actin filament disassembly by Clostridium difficile toxin B, G487 in tannin-mediated arachidonic acid re-

lease from alveolar macrophages, L33

Calcium transients

in cardiomyocytes, postinfarction changes and effects of propionyl-Lcarnitine, H1702

effects of anoxia, reoxygenation, hypoxia, and metabolic inhibition, H1045

intracellular, role in atrial myocyte contraction, effects of age on, H1195

Calcium transport

in cardiac sarcoplasmic reticulum, responses to pressure-overload hypertrophy, C252

relation of peak [Ca], value and rate of [Ca], decline, C271

Calcium-ATPase (Calcium pump) in cardiomyopathic hamster sarcoplasmic reticulum, effects of perindopril, H1947

of endoplasmic reticulum, role in glucose modulation of renal [Ca<sup>2+</sup>], F671

# Calcium-ATPase (Calcium pump)

of sarcoplasmic reticulum, role in cyclic nucleotide-induced airway smooth muscle relaxation, L407

in thin ascending limb of Henle's loop, F1148

#### Calcium/calmodulin-dependent protein kinase

role in ventricular myocyte relaxation and cytosolic free calcium kinetics, H703

#### Calcium/calmodulin-dependent protein kinase II

effects on cortical collecting duct K<sup>+</sup> channels, F211

# Calcium-induced Ca<sup>2+</sup> release mechanism

in cardiomyocyte contraction, effects of age on, H1195

# Calcium-release channel (ryanodine receptor)

gene expression in pressure-overload cardiac hypertrophy, C252

#### Calmodulin

and activation of sodium/hydrogen exchangers, C283

activity in sensitized airway smooth muscle, L739

## Calmodulin antagonists

effects on H<sup>+</sup>-dependent glycylsarcosine uptake in MDCK cells, F391

#### Calphostin C

effect on ischemic preconditioning in rat heart. H426

effects on pulmonary vascular bed responses to vasoconstrictors, L532

#### Calponin

non-phosphorylation during carotid artery contraction, C903

### Calsequestrin

gene expression in pressure-overload cardiac hypertrophy, C252

#### cAMP, see Adenosine 3',5'-cyclic monophosphate

# cAMP-responsive element binding protein

interaction with DNA and glucocorticoid receptors in mononuclear cells, C331

# Canalicular multispecific organic anion transporter

and bile acid facilitation of protoporphyrin excretion, G754

#### Cancer

# see also Tumors

cachexia from, muscle proteolysis in, role of ATP-ubiquitin-proteasome pathway, E996

pancreatic, stimulation by gastrin, R135 Cancer chemotherapy

quinones, DNA damage and cytotoxicity from  $H_2O_2$  production, protection by  $\alpha$ -ketoacids, C227

#### Capillaries

#### see also Microvasculature; Permeability

blood flow distribution in ischemic myocardium, role in inhomogeneous perfusion pattern, H2183

cerebrocortical, blood flow, response to hypotension and intracranial hypertension, H2202 hydraulic conductivity, effects of NO synthase inhibition, H1856

hydraulic conductivity, relation to plasma protein and volume status in frogs, seasonal variations, R468

hypoxia-stimulated network formation in pulmonary microvessel endothelial cells, L789

modules and networks, changes with age, H1215

postischemic no-reflow phenomenon, effects of ischemic preconditioning and role of ATP-sensitive K channels, H2063

pressure physiology in healthy adult volunteers, H147

pulmonary, role of actin in maintenance of endothelial cell integrity, L753

#### Capsaicin

and effects of neurokinin depletion on antigen-induced pulmonary changes after sensitization, L781

effects on enterogastric inhibition of gastric acid secretion, G286 gastric fluid increase from, role in adap-

gastric fluid increase from, role in adaptive cytoprotection, G200

# Capsaicin-sensitive primary afferent fibers

role in regulation of jejunal alanine absorption, G695

# Capsaicin-sensitive sensory nerves

gastric vasodilation from, interactions of NO and calcitonin gene-related peptide, G791

#### Captopril

effects on arterial remodeling after myocardial infarction, H2092 effects on intracellular sodium and pH,

C366

#### Carbachol

actions on parietal sheet of renal glomerulus, F1053

effects on [Ca<sup>2+</sup>]; in sympathetic neurons, C829

effects on pancreatic goblet cell degranulation, G24

need for cAMP in eliciting parietal cell aminopyrine accumulation, G82

#### Carbohydrates

dietary, effects on jejunal lactase gene expression, G1066

effects of nocturnal rise in cortisol, E595 low- $Po_2$  stimulation, role of pancreatic hormones, E1174

metabolism in hypoxic fetus, placenta, and uterus, R303

metabolism in ischemic heart, effects of dichloroacetate, H879

oxidation, measuring by respiratory calorimetry vs. isotopic tracers, E789

#### Carbon dioxide

airway smooth muscle relaxation from, role of pH<sub>i</sub>, L207

metabolic production, use of [13C]bicarbonate infusion for measuring, E1123

partial pressure, effects on K<sup>+</sup>-induced contractions in bronchial rings, L642

production, ultradian and circadian oscillations in various endotherms, R253

#### Carbon dioxide/bicarbonate

effect on acid extrusion in proximal tubule pH<sub>i</sub> regulation, F179, F193

#### Carbon dioxide-bicarbonate

interstitial, role in gastric mucosal oxyntic cell pH<sub>i</sub>, G496

#### Cardiac baroreflex

measuring sensitivity from mean arterial pressure and heart rate using statistical dependence, R382

#### Cardiac cycle

teaching with echocardiography, S2

#### Cardiac hypertrophy

angiogenesis during, effect of aging on, H419

angiotensin-converting enzyme inhibitor effects on, role of intracellular sodium activity, C366

atrial natriuretic factor levels and left atrial and ventricular compliance, H781

cholesterol in plasma membrane vs. intracellular pools, H759

from pressure overload, role of endothelin-1 and its binding sites, H2084

natriuretic peptide mRNA levels and distribution in hypertrophied right ventricle, H162

reduced inotropic myocardial responses to  $\alpha$ -adrenergic stimulation, H1202

regression after closure of aortocaval fistula, H2345

right ventricular, effect on right ventricular infarct size, H1781

role of transforming growth factor-β secretion by neonatal cardiac fibroblasts, C910

sarcoplasmic reticulum protein decreases, role in dysfunction, C252

thyroxine-induced, effects on myocardial O<sub>2</sub> consumption and cGMP level,

#### Cardiac output

see also Hemodynamics

effects of C-type natriuretic peptide infusions in sheep, R201 effects of long-term endothelin infu-

sions, R375

effects of vasotocin, atrial natriuretic peptide, and epinephrine in eels, R1273

measurements, adjusting for body surface area, superiority of regression over indexing, R978

in mice, utility of high-frequency pulsed Doppler ultrasound, H499

in septic shock, effects of nitric oxide synthase inhibitors, H2017

and sex differences in blood flow distribution during normo- and hyperthermia, R66

#### Cardiac pacing, see Heart rate, pacing Cardiac vagal tone

role in carotid-cardiac baroreflex latency and effects of exercise, H1208

#### Cardiac-related sympathetic discharges

#### synchronization, R1472

Cardiac/slow-twitch muscle Ca<sup>2+</sup>-ATPase (SERCA2a)

gene expression in pressure-overload cardiac hypertrophy, C252

# Cardiomyocytes

adenosine protection against calcium paradox injury, mechanisms, C838

atrial

acetylcholine-induced  $K^+$  currents, potentiation by acetylcholine, mechanism, and nature of  $K^+$  currents, H1313, H1322

age-related changes of transient outward and inward rectifier currents, H1335

atrial natriuretic peptide secretion, autocrine/paracrine autoregulation, E428

quantifying ANP-secreting myosin + and synthesis + cells, H265 repolarization, role of Ca<sup>2+</sup>-dependent

Cl-current, H1992

role of Ca<sup>2+</sup> channels in regulating contraction, effects of age on, H1195 basic fibroblast growth factor receptor

expression and functionality, H1927 chloride current, of CFTR, dialysis ef-

fects on autonomic regulation, H1795

contractile function during recovery from tachycardia-induced cardiomyopathy, H836

current-induced early afterdepolarizations, computer model, H2440 cytosolic oxygen level, measurements

within single cell, H2561 delayed relaxation during hypoxic reoxy-

genation, effects of cGMP, H2396 endothelin-1 production in pressure overload cardiac hypertrophy, H2084

expression and secretion of atrial natriuretic peptide, effects of 1,25-dihydroxyvitamin D<sub>3</sub>, E1108

hypertrophic, cholesterol distribution and chemical form, H759

ischemia-induced sarcolemmal damage, role of phospholipid physicochemical properties, H773

left ventricular epicardial vs. midmyocardial delayed rectifier K<sup>+</sup> current components, H604

metabolic inhibition, sodium and calcium intracellular levels and cell morphology during metabolic inhibition, H1239

neonatal, transforming growth factor-β secretion and effects of norepinephrine and angioensin II, C910

oxidant injury to, role of intracellular copper- and zinc-containing superoxide dismutase, H1115

palmitate uptake, roles of albumin, facilitation, and endothelial cell synergism, H1659

postinfarction contractility and calcium dynamics and effects of propionyl-Lcarnitine, H1702

postischemic metabolic activity, correlation with myocardial viability, H1265

protein content and synthesis rates, effects of long-term electrically stimulated contraction, H2495

rectification and permeation in CFTR epithelial and cardiac isoforms, C636

relaxation rate, effects of chronic supraventricular pacing tachycardia, H2104 reoxygenated, protection from hypercontracture by Na<sup>+</sup>/H<sup>+</sup> exchange inhibition, H1531

reversibility of volume overload structural and functional changes, H2345

sarcolemmal localization of Na<sup>+</sup>/Ca<sup>2+</sup> exchanger in immature and adult rabbits, C1126

sodium/calcium exchange

ontogeny in rabbits and guinea pigs, relation to sarcoplasmic reticulum maturity, H1714

role in contraction, in newborn vs. adult rabbits, H1723

transgenic, AT-1 cells, renin-angiotensin system in, H1471

tumor necrosis factor- $\alpha$  negative inotropic properties in, effects of TNF binding proteins on, H517

ventricular

action potential duration and membrane currents, effects of extracellular magnesium, H2321

calcium currents during action potential conduction between two cells, H2476

changes during culture, in electrophysiology, C1002

changes during culture, in sodium current, C993

contraction, and palmitoyl-L-carnitine inhibition of Na/K pump current in ventricular cells, H1027

effects of intra- and extracellular acidosis on inward Na<sup>+</sup> current, H1749 effects of nitric oxide on calcium current, C45

eicosanoid synthesis in: effects of hypoxia, reoxygenation, and n-3 fatty acids, H308

excitability changes, role of inward rectifier, model study, H1181

forskolin-stimulated L-type calcium currents, effects of protein kinase inhibitor H-89, C651

intracellular calcium and contraction, effects of anoxia, H1045

intracellular sodium and pH, angiotensin-converting enzyme inhibitor effects on, C366

method for obtaining from human biopsies for electrophysiological studies, H1757

palmitoylcarnitine-induced [Na<sup>+</sup>]<sub>i</sub> increase and transient inward current, H2405

potassium currents in, effects of thyroid status, H576

in prehypertrophic cardiomyopathy, calcium currents and electrophysiological properties, H999

relation of peak [Ca]; value and rate of [Ca]; decline, C271

relaxation, role of calcium/calmodulin-dependent protein kinase, H703 role of G proteins in interleukin-1β

effects on L-type Ca<sup>2+</sup> current, C339 in sarcoplasmic reticulum, Ca<sup>2+</sup> load effects on fractional calcium release,

sarcoplasmic reticulum Ca<sup>2+</sup> load/gain relationship, H916

thyroid-induced changes in Na<sup>+</sup>-K<sup>+</sup> pump, effects on action potential duration, H1838

Cardiomyopathy

calcium overload in, role of early increased Ca<sup>2+</sup> influx via L-type channels, H999

diabetic, creatine kinase kinetics in, E1070

effects on papillary muscle subcellular Ca<sup>2+</sup> regulation, H1875

sarcoplasmic reticulum calcium pump in hamster, effects of perindopril, H1947

tachycardia-induced

left ventricular and cardiomyocyte function during and after, H836

left ventricular remodeling and changes in contractile proteins and cytoskeleton, H2426

Cardioplegia

effects on myocardial lymphatic function, H178

with hypothermia, tolerance of congenitally hypoxemic myocardium at various ages, H1165

Cardiopulmonary baroreflex see also Baroreceptor reflexes, cardiopulmonary

role in renal sympathetic nerve activity in cirrhosis, R117

Cardiopulmonary bypass

cardioplegic arrest and myocardial lymphatic function, H178

contact-mediated inflammatory response from extracorporeal circulation, effects of kallikrein inhibitors, H1352

maintenance of systemic arterial pressure, H2329

Cardiopulmonary mechanoreceptors loading magnitudes during graded headdown tilt, R1289

Cardiopulmonary volume-sensitive receptors

gestational effects on, R736 Cardiovascular dynamics

of eels, effects of vasotocin, atrial natriuretic peptide, and epinephrine, R1273

Cardiovascular neurons

in ventrolateral medulla, effects of somatic afferent nerve stimulation, R1464

Cardiovascular reflexes

hydrogen peroxide induced, and myocardial ischemia-reperfusion effects, H2114

viscera-stimulated, role of tachykinins and their receptors, H526

Cardiovascular system

adrenomedullin actions in conscious sheep, H2574

during recovery from exercise, relation to metabolism and exercise cost, H2311

effects of acute plus chronic hypoxemia, H974

embryonic bradycardia in C locus mutant chicks, H56

function measurements in fish, H1814 insular cortex-mediated autonomic responses in Wistar and spontaneously hypertensive rats, R214

pressor responses, from muscle metaboreflex, effects on muscle blood flow, H980 Cardiovascular system (continued)

protective effects of potassium, mechanisms (review), R825

regulation

central, angiotensin II effects in rostral ventrolateral medulla, R272 role of gonadal hormones, R40 role of parabrachial nucleus, R707 responses to graded head-down tilt,

R1289

responses to hemorrhage, role of brain angiotensin II, R1500

responses to long-term endothelin infusions, role of renin-angiotensin system, R395

responses to mental stress, effects of aging and depression on, R865

responses to visceral afferent stimulation after cord transection, H2077

responses to water immersion in rhesus monkey, effects of cardiac denervation, R1040

role of gonadal hormones in regulation, H377

studies in mice, utility of high-frequency pulsed Doppler ultrasound, H499 vestibular input, required brain stem

projections, R1381 Carnitine, see Propionyl-L-carnitine Carnitine palmitoyltransferase I

inhibition, role in myocardial reperfusion recovery, H2505

Carnitine palmitoyltransferase II mRNA response to increased contractile activity, E277

Carotid arteries

bifurcation, effect on artery wall oxygenation, H155

calponin nonphosphorylation during contraction, C903

contraction and relaxation, myosin light chain and MLC kinase phosphorylation, and [Ca<sup>2+</sup>]<sub>i</sub>, H2466

genistein effects on Ca<sup>2+</sup> mobilization, C1425

occlusion, in fetus, and immaturity of vagal afferent buffering systems, R343

relaxation, acetylcholine-induced, effects of pulse pressure on, H359

smooth muscle glycolytic vs. oxidative metabolism and compartmentation of energetics, C628

Carotid body chemoreflex

role in blood pressure and heart rate oscillations in sleep apnea, H2145

Carotid chemoreceptors (carotid bodies)

commissural subnucleus of nucleus tractus solitarius receiving afferents in rat, R851

glomus cell  $[Ca^{2+}]_i$  response to hypoxia, developmental changes, L801

Carotid sinus nerve

denervation, effects on pressor-induced responses of ventral medullary surface, R324

Carotid-cardiac baroreflex latency effects of exercise on, H1208

Cartilage

perichondrial localization of endothelin ET-1/ET<sub>A</sub> receptor system, C496 Castration

effects on gender differences in growth response to clenbuterol, E1077 effects on pituitary levels of gonadotropin-releasing hormone in rat, E685

Catabolite accumulation

role in ischemia-reperfusion edema, H233

Catalase

activity in bronchial epithelial cells, effects of cytokines on, L71

effects on oxidant-induced changes in tracheal epithelium, L284

effects on oxidase-induced hepatic microcirculatory changes, G47 role in pulmonary hypoxic vasoconstric-

tion, L546

Catecholamines

and angiotensin II induction of α<sub>1</sub>-adrenergic receptors in aortic cells, H1006 content and turnover rate in internal vs.

content and turnover rate in internal vs. external white fat pads in hamster, R744

effects on acetylcholine release from equine airway parasympathetic nerves, L368

effects on plasma glucose and free fatty acids in fish, R1163

free vs. sulfoconjugated, in fetus vs. preterm newborn, effects of corticosteroids, E28

hemodynamic effects in septic shock, H692

lipolysis from, regional variations, mechanisms, E1135

and metabolic adaptations to reduced food intake in desert survival, R1101

plasma levels after chronic NO synthase inhibition, H2267

production and metabolism in liver, mesenteric organs, and kidney, G641

release from PC12 cells, effects of C-type natriuretic peptide on, C978 release with VIP in response to splanch-

nic nerve stimulation, R1449 role in muscle glucose metabolism in insulin-induced hypoglycemia, E248

secretion in insulin-induced hypoglycemia, effect of hepatic denervation, R50

Cathepsin L

role in intrinsic factor degradation, G33 Cation channels

role in endothelin-3-induced vasopressin secretion, E467

Cation channels, nonselective acetylcholine-induced, in smooth

muscle, role of H<sup>+</sup>, C162 in corneal endothelium during wound healing, C1179

and cyclopiazonic acid-augmented Ca<sup>2+</sup> entry into endothelial cells, H138

Cation transport

in mouse erythrocytes, C894

Cationic amino acid transporter, mouse

and system y<sup>+</sup> transport of arginine by Caco-2 cells, changes with differentiation, G578

Cations

entry into colonic epithelial cells, role of tyrosine kinases, C154 Caveolae

and endothelial transport inhibition by N-ethylmaleimide, H48

CD11b/CD18 adhesion molecules and neutrophil migration across T84

epithelial cells, C472

CD11/CD18 adhesion molecules and neutrophil-glomerular endothelial cell interactions, F1

Cell adhesion

during neutrophil-glomerular endothelial cell interactions, F1

leukocyte-endothelial cells, in trachea, role of neurokinin receptors and relation to plasma leakage, L263

Cell cycle

see also Cell growth response

G<sub>1</sub>/S interface, roles of insulin-like growth factor I and c-myb in [Ca<sup>2+</sup>]<sub>i</sub> control, C856

Cell death

see also Apoptosis

correlation with nitric oxide-induced glyceraldehyde-3-phosphate dehydrogenase suppression, C669

hepatocytes, from anoxia or inhibited electron transport, role of Ca<sup>2+</sup> and mitochondrial permeability transition, C676

Cell differentiation

see also Differentiation

in bone, and sodium-dependent ascorbic acid transport requirement in osteoblasts, C1430

enterocytic, role of laminin and merosin, G857

in intestinal epithelium, use of Moluccella laevis lectin as marker, G553

muscarinic-activated  $pH_i$  changes in naive vs. fully differentiated avian salt gland cells, C944

role of G proteins in stem cell progression to primitive endoderm, C1460

in smooth muscle, transcriptional control regions in  $\alpha$ -actin promoter, C1259

Cell energetics

forearm power output, relation to Gibbs free energy of ATP hydrolysis, C1474

Cell growth response

in adrenal glomerulosa cells, from angiotensin II, E135

platelet-derived growth factor isoformspecific induction of low-density lipoprotein receptor gene, C1033

Cell membranes, see Membranes

Cell migration

of bronchial epithelial cells, effects of cigarette smoke, L723

and hypoxia-stimulated capillary network formation in lung microvessel endothelial cells, L789

locomotive force generation in moving leukocyte, C1308

of neutrophils into bronchoalveolar fluid, effects of anti-cytokine-induced neutrophil chemoattractant antiserum, L245

urokinase receptor force transmission and coupling to cytoskeleton, C1062

of vascular smooth muscle cells, effects of thrombin and urokinase receptor, C1195 virus effects on bronchial epithelial cell migration and matrix attachment, L214

Cell morphology

ventricular myocyte changes during culture

effects on electrophysiology, C1002 effects on sodium current, C993

Cell proliferation

in corneal epithelium, modulation by opioid growth factor, R942 vascular

in pulmonary hypertension, role of static wall tension, H1133

in smooth muscle, inhibition by monocyte chemoattractant protein 1, H1021

Cell renewal

small intestine crypt-villus axis organization and stem cell hierarchy during development in mouse, G813

Cell volume regulation see also Osmoregulation; Regulatory

volume decrease
AE1 anion exchangers in, variant NH<sub>2</sub>terminal cytoplasmic domains in
chicken. F503

cortical collecting duct Na<sup>+</sup> channels, feedback regulation and response to cAMP, F480

effect of hyposmolarity on apical highconductance K channels in collect-

ing tubule, F569 in endocardial endothelium, possible mechanisms, H2036

in erythrocytes

urea- and swelling-activated K-Cl cotransport, C1026

urea-activated K-Cl cotransport in humans, C1018

and osmolality effects on aldosterone secretion: role of chloride influx, R8

osmolality-stimulated atrial natriuretic peptide secretion, role of calcium and sodium ions, E476

osmotically activated ion transport in smooth muscle vs. Chinese hamster ovary cells, C147

regulatory volume decrease, and taurine permeability of proximal tubule basolateral membrane, F595

sodium/hydrogen exchange and anion exchanger AE2 activation in *Xeno*pus oocytes, C201

swelling-activated K-Cl cotransport in red blood cells, role of creatine kinase, C660

swelling-activated K<sup>+</sup> and Cl<sup>-</sup> transport in lamprey erythrocytes, R590 in trabecular meshwork cells of eye, role of sodium-potassium-chloride co-

transport, C1067

communication between, see Communication, intercellular

dedifferentiation, in postischemic dysfunctional cardiomyocytes, H1265 hypertrophy, in cardiomyocytes, effects of long-term electrically stimulated

contraction, H2495 in vitro culture systems, for human airway epithelial cells (review), L347

Cellubrevin

in inner medullary collecting duct and bladder, C792 Cellular respiration

and hypoxic inhibition of cytochrome-c oxidase, L918

Central nervous system

HIV gp120 activation of astrocyte largeconductance K<sup>+</sup> channels, C1440 vagal activation by thyrotropin-releasing hormone analogue, effects on gastric NO, G895

Cerebral artery

resting load, regulation of vascular sensitivity, C1332

Cerebral blood flow

0.1-Hz oscillations, effects of anesthetics and arterial blood pressure, H569

after brain injury following cocaine use, H68

effects of lysophosphatidic acid, H2048 estimation of laser-Doppler flux biological zero, H213

fluctuations, coupling to electrocortigraphic bursts, R454

in newborn

hypoxic, effects of opioids and NO, H226

prostaglandin-induced pial artery vasodilation, role of NO and cyclic nucleotides, H1436

Cerebral ischemia

inducible nitric oxide synthase role in brain damage, R286

Cerebral vasculature

mechanisms of hypercapnia-stimulated prostaglandin synthesis, H591

responses to hypoglycemic hypoxia in newborn and role of adenosine, H871

Cerebrospinal fluid

cyclic nucleotides in, effects of β-agonists and NO, H1071

potassium levels, and hypertension in DOCA rats, H646

sodium receptors, role in water intake and hypothalamoneurohypophysial activity in rat, R651

Cerebrovascular injury

bradykinin-induced, sites of cyclooxygenase mediator, H458

C-fibers

nociceptive, sensitization in zinc deficiency, R1423

c-fos

gene expression, and angiotensin II induction of  $\alpha_1$ -adrenergic receptors in aortic cells, H1006

meal-induced expression, gastrointestinal cues stimulating, R223

cGMP, see Guanosine 3',5'-cyclic monophosphate

Chagas' disease

effects on epicardial myocyte phase 1 repolarization and transient outward K<sup>+</sup> current, H1258

Chaos theory

deterministic, and electromagnetic field studies inconsistent results, R1013 nonlinear dynamic aspects of arterial blood pressure and renal blood flow,

H621 Chaperone proteins

heat-shock protein-70 effects on heart peptide initiation during head-down tilt, C1375

heat-shock protein-70 effects on polypeptide elongation during skeletal muscle atrophy, C1369 Charybdotoxin

effects on K<sup>+</sup> currents in longitudinal and circular colon muscle layers, C619

Chelating agents

role in regulation of angiogenic growth factor, C1362

Chemoattractants

in neutrophil, cytokine-induced, effects in lung inflammation, L245

Chemokines

C-X-C family vs. C-C family, stimulusand cell-specific expression by pulmonary stromal cell populations, L856

interleukin-8 and monocyte chemoattractant protein-1, mRNA expression in oxygen-injured lung, L826

Chemoreceptors

commissural subnucleus of nucleus tractus solitarius responding to carotid body stimulation in rat, R851

peripheral, effects on parabrachial nucleus, R707

stimulation, amygdalar responses to, R666

Chemotaxis

eosinophilic, interleukin-8-induced, relation to respiratory allergy, L117

hepatocyte growth factor-mediated, requirement for phosphatidylinositol 3-kinase, F1211

Chenodeoxycholic acid

effects on hepatocellular cAMP formation, G300

Children

energy expenditure, role of parental obesity, E917

Chloramphenicol acetyltransferase reporter plasmids and gene transfer by tracheal insuffla-

tion, L1052

Chloride channels

see also Cystic fibrosis transmembrane conductance regulator apical vs. basolateral, in proximal tu-

bule, F204 calcium-activated, in lacrimal gland aci-

nar cells, pH<sub>i</sub> effects on, C647 cAMP-activated, in dogfish rectal gland, C70

cGMP-activated, in proximal convoluted tubule cells, F323

in inner medullary collecting duct cell line mIMCD-K2, F347

in nonpigmented ciliary epithelial cells role in regulatory volume decrease, C721

staurosporine activation and  $pI_{Cln}$  homologue, C572

outwardly rectifying, in CFTR-mutant epithelial airway cells, effect of low temperature on, C243

protein kinase A-activated, in gastric parietal cells, C191

volume-activated, outwardly rectifying, in endocardial endothelial cells, H2036

Chloride conductance

cAMP- vs. Ca<sup>2+</sup>-regulated, in oviduct of normal vs. cystic fibrosis mice, C708

CFTR-mediated, activation by luminal extracellular ATP in T84 epithelial cells, C425

#### Chloride conductance (continued)

in CFTR-mutant epithelial airway cells, effect of low temperature on, C243

role in regulatory volume decrease mechanisms in nonpigmented ciliary epithelial cells, C721

#### Chloride currents

see also Cystic fibrosis transmembrane conductance regulator

calcium-activated, in portal vein smooth muscle cells, stimulation by Na+/ Ca2+ exchange, H1906

calcium-dependent, role in atrial repolarization, H1992

forskolin- and norepinephrine-activated, in mouse mandibular salivary duct,

outward rectification in CFTR epithelial and cardiac isoforms, C636

#### Chloride ion

see also Potassium-chloride cotransport; Sodium-potassium-chloride cotransport

cAMP-mediated secretion, jejunal, in CF vs. normal mice, G505

distension-induced intestinal secretion, vasoactive intestinal peptide as neurotransmitter, G725

#### extracellular

effects of removal on pHi in smoothmuscle vs. Chinese hamster ovary cells, C147

role in pHi control in vascular smooth muscle, C580

in inner medullary collecting duct cell line mIMCD-K2

electrogenic secretion, stimulation by vasopressin and cAMP, F854 electrogenic transport, F347

intracellular, and vasotocin effects on distal nephron whole cell currents, F64

intracellular, role in rectification in CFTR epithelial and cardiac isoforms, C636

role in osmolality- and angiotensin IIinduced changes in aldosterone secretion, R8

role in variable renal response to cyclooxygenase inhibition, F561

secretion in cystic fibrosis mouse vs. humans, C297

secretion regulation in intestinal goblet cell, C1503

and sodium entry into distal convoluted tubule cells, F89

swelling-activated transport in lamprey erythrocytes, R590

and taurine permeability of proximal tubule basolateral membrane, F595

transepithelial secretion, relation to submucosal glands in distal airways, L526

#### transport

cAMP-stimulated, in proximal tubule, F204

mechanisms in early proximal tubule,

osmotic regulation, and AE2 anion exchanger in Xenopus oocytes, C201

transport in distal colon, time course of disruption and recovery during colitis. G622

transport in human fetal distal lung, 1.270

vasopressin effects on conductance in luminal and basolateral cortical collecting duct, F20

#### Chloride secretion

colonic, histamine H2 receptor-induced, role of VIP-ergic and cholinergic neurons, G465

#### Chloride/base exchange

in superficial vs. juxtamedullary nephrons of proximal convoluted tubule, F847

#### Chloride/bicarbonate exchange

relation to Na+/H+ exchange and anion exchanger AE2 activation in Xenopus oocytes, C201

role in electrogenic chloride secretion in inner medullary collecting duct cell line mIMCD-K2, F854

role in pHi control in vascular smooth muscle, C580

sodium-dependent, and osmotically induced intracellular pH changes, C147

#### Chloride-secreting cells

in teleost fish, low-conductance, cAMPactivated anion channels, R963

#### Chloroquine

effects on muscle glucose and protein turnover, E820

hepatic uptake, basolateral dicarboxylate/cholate antiport system, G797

# Cholecystokinin

effects on intake of highly nutritive diet vs. sucrose, R520

effects on pancreatic goblet cell degranulation, G24

effects on vagal gastric mechanoreceptors, G355

gastrin-cholecystokinin-B receptors on J.RT3-T3.5 Jurkat cells, G522

insensitivity in genetically diabetic Otsuka Long-Evans Tokushima Fatty rat, E531

in pancreatic acini, activation of mitogen-activated protein kinase kinase, G1060

phenylalanine-induced intestinal secretion, role of calcium, G90

role in pancreatic enzyme secretion, E349 role in volume and rhythm of pancreatic

enzyme secretions, G251 Cholecystokinin octapeptide

effects on amino acid-induced insulin secretion, E949

suppression of feeding by near-celiac vs. intravenous infusion, R150

#### Cholecystokinin receptors

subtypes on guinea pig chief cells, G605 Cholecystokinin-B/gastrin receptors role in gastrin-stimulated pancreatic cancer growth, R135

#### Cholestasis

bile acid-induced hepatocyte apoptosis in, role of serine protease translocation to nucleus, G613

effects on IL-1-induced ACTH release, role of impaired hypothalamic PGE2 release, G404

hepatic opioid mRNA expression during,

#### Cholesterol

exercise effects in skeletal muscle vs. adipose tissue, E229

high-density-lipoprotein, and impaired postprandial adipose tissue triacylglycerol clearance in obesity, E588

in hypertrophic cardiomyocytes, distribution and chemical form, H759 intestinal absorption and lymphatic transport, effect of ingested struc-

tured triglycerides on, G568 lovastatin effects on hepatic metabolism in rat, G242

in vascular smooth muscle membranes, and atherosclerotic changes in venous contractile function and ion channels, H2522

#### Choline

whole body release and clearance, effects of hypoxia and hypercapnia, R1520

Cholinephosphotransferase in alveolar type II cells, effects of H2O2,

#### Cholinergic agonists

activation of phospholipase D in lacrimal gland acini, C713

# Cholinergic mechanisms

in control of heart rate, changes in left ventricular dysfunction and heart failure, R310

role in volume and rhythm of pancreatic enzyme secretions, G251

#### Cholinergic nerves

of airway smooth muscle, role of a2- and β<sub>2</sub>-adrenoceptors, L368

### Cholinergic neurotransmission

acetylcholine release from airway smooth muscle nerve endings, L432 and β-adrenergic agonist effects on acetylcholine release from tracheal

#### parasympathetic nerves, L950 Cholinergic pathways

central, role in gastric slow wave dysrhythmias of motion sickness, G539 role in histamine H2 receptor-induced colonic secretion, G465

# Cholinergic receptors

muscarinic, role in nasal gland acinar cell [Ca2+]; signaling, L361

role in glucose-induced pancreatic insulin release, E336

# Cholinergic stimulation

of coronary artery vasomotor responses after myocardial ischemia/reperfusion, H886

# Chorda lingual nerve

chorda tympani afferents, role in reflex submandibular salivation and vasodilation, R438

### Chorda tympani nerve

response to HCl under voltage clamp, C1295

role of afferents in reflex submandibular salivation and vasodilation, R438

#### Chromogranin C, see Secretogranin II Chylomicrons

oxidative modification, effects on rate and site of clearance, G709

oxidized, induction of leukocyte-endothelial cell adhesion, mechanisms, H2175

#### Chyme

duodenal transport patterns during fasting and postprandial states, G700 effects on proximal colonic tone, G95

Cigarette smoke

effects on bronchial epithelial cell migration and matrix attachment, L723 emphysema from, alveolar collagen

breakdown and repair, L17 platelet hyperactivity from, role of hy-

drogen and lipid peroxides, H679 tobacco vs. non-tobacco, effects on gastric ulcer margin hyperemia, G153

Circadian rhythms

effects of nocturnal cortisol rise on carbohydrate and fat metabolism, E595 in kidney function, effects on inulin and p-aminohippuric acid clearance,

nighttime increase in baroreflex sensitivity, aging effects on, H1606

of pancreatic exocrine secretions, regulatory mechanisms, G251

reentrainment, effects of periodic bright light and social cues, R528 relation to ultradian rhythms, R253

serotonergic control, changes with aging, R293

suppression in rat by continuous light, R1111

Circular vection

gastric slow wave dysrhythmia from, role of cholinergic and  $\alpha$ -adrenergic pathways, G539

Circulatory system

responses to graded head-down tilt, R1289

Cirrhosis, hepatic

endothelium-dependent vasodilation in, G459

from chronic iron overload, and ironinduced lipocyte activation, G451

renal sympathetic nerve activity, arterial and cardiopulmonary baroreflex control, R117

cis-Parinaric acid

peroxidation of, differential sensitivity of membrane inner and outer leaflets, G260

Citrate

in muscle, effects of acetate infusion and exercise, E1007

Citrate synthase

in skeletal and cardiac muscle, adaptive response to exercise, R130

Citric acid cycle

method for calculating rate of chemical flux in heart, E397

and propionyl-L-carnitine effects on ischemic cardiac contractile dysfunction, H441

Citrulline

plasma kinetics and effects of dietary arginine levels, E360

synthesis from glutamine in newborn enterocytes and effects of glucose on, R334

Claudication, see Intermittent claudication

Clenbuterol

comparison with BRL-47672 (morpholine compound), E159

effects on muscle levels of bovine fasttwitch myosin light chain 1, E858 sexual dimorphism in growth response, E1077 Cloaca

osmoreceptors in, role in colonic motility, urine reflux, and osmoregulation in fowl, R690

Clonidine

effects on sympathetic salivation and on parasympathetic salivation and vasodilation, R1196

Clostridium difficile toxin B

actin filament disassembly by, role of calcium influx, G487

Clusterin

in neonatal ureteral obstruction, regulation by AT<sub>1</sub> receptors, F1117

Coagulation

and  $\alpha_2$ -macroglobulin gene expression during hibernation in ground squirrel, R1507

Coagulation system

contact pathway, in extracorporeal circulation, effects of kallikrein inhibitors on neutrophil elastase release, H1352

role of thrombin receptor activation in ventricular arrhythmias during myocardial ischemia, H1740

Cobalamin

ileal absorption, and intrinsic factor degradation by cathepsin L, G33

Cobalt

transport into cells, tracking with fluorescent probe, C1354

Cocaine

brain injury after, posttraumatic blood pressure and cerebral blood flow, H68

Cochlea

mechanotransduction in hair cells: stereociliary bundle structure and function (review), C1

Coenzyme A

and propionyl-L-carnitine effects on ischemic cardiac contractile dysfunction, H441

**Cold acclimation** 

effects on glucose transport in guinea pig brown fat cells, R98

Cold exposure

effects on secretagogue-induced changes in serum prolactin and growth hormone, E758

Colitis

benefits of nitric oxide inhibition, G673 time course of changes in electrolyte transport and inflammation indexes, G622

Collagen

alveolar, breakdown and repair in smoke-induced emphysema, L17 in early postnatal lung development, effects of indomethacin on, L56

production by mesangial cells, effects of periodic high extracellular glucose, F13

production in lipocytes, from chronic iron overload, and iron overloadinduced hepatic fibrosis, G451

synthesis in osteoblasts, effects of metabolic vs. respiratory acidosis, C80

type

altered expression in lung exposed to 85% O<sub>2</sub>, L78

mRNA expression after mechanical stimulation, E318

procollagen synthesis sites during human fetal lung development, L309 role in cell-matrix interactions and signaling pathways in osteoblasts, C1090

Collagenase

pulmonary interstitial, expression in lung, effects of 85% O<sub>2</sub>, L78

Collagen-binding receptors

integrins as, in fetal lung fibroblasts vs. epithelial cells, L136

Collateral arteries

adaptation to arterial insufficiency and effect of exercise training, H125, H1174

Colloidal molecules

roles in Starling's hypothesis and in transcapillary flux, H2133

Colon

contractile patterns, relation to colonic propulsion, G530

contractility of longitudinal muscle, effects of food protein-induced GI allergy, G764

crypt cells, prostaglandin E<sub>2</sub> receptors, properties, G270

epithelial cells, NAD-dependent 11βhydroxysteroid dehydrogenase, C1467

histamine  $H_2$  receptor-induced secretions, role of VIP-ergic and cholinergic pathways, G465

motility

induced by GABA<sub>A</sub> receptor blockade in hypothalamic dorsomedial nucleus, G514

as osmoregulator in fowl, effects of urine flow rate and osmolality, R690 in unrestrained ambulatory dogs, 24-

hour study, G650

musculature intercellular communication mechanisms: metabolic coupling, C1492 longitudinal vs. circular muscle, role

of Ca<sup>2+</sup>-activated K<sup>+</sup> channels, C619

peptide YY, trophic actions and ontogeny of gene expression, G71

proximal, tonic responses to eating, nutrients, and simulated diarrhea, G95

uptake and interconversion of plasma n-3 polyunsaturated fatty acids, G732

Colony-stimulating factors

from alveolar cells, effects of surfactant protein A and endotoxin, alone and combined, L144

Communication

neurohumoral, angiotensin II and subfornical organ, paraventricular nucleus, spinal cord pathway, R625

Communication, intercellular cytokine-binding proteins in lung (review), L869

effects of liver injury on hepatocyte gap junction communication, C1186

gap junctional connexin proteins in smooth muscle and endothelium, H729

metabolic coupling in colon musculature, C1492

remote effects of pressure changes in arterioles, H1379

tracheal gap junction distribution, changes with postnatal development. L576 Comparative physiology

lactate influx into red cells, mechanisms in athletic vs. nonathletic species, R1121

renal distribution of constitutive NO synthase isoforms in various mammal species, F885

ultradian and circadian metabolic oscillations in various endotherms, R253

Compartmentation

intracellular, site of Na/Ca exchangedependent Ca compartment, C119 metabolic, in carotid artery smooth muscle, C628

Complement

activation in extracorporeal circulation, effects of kallikrein inhibitors on neutrophil elastase release, H1352

component C5, effects on neutrophilglomerular endothelial cell interactions, F1

component C5a

effects on neutrophil-endothelial interactions in coronary microvessels, H490

role in myocardial ischemia-reperfusion injury, H448

depletion, effects on inflammation and immune-mediated glomerulonephritis, F258

Complement proteins

changes in lung neutrophil kinetics from, pentoxifylline effects on, L27

Conditioned taste aversion

effects of parabrachial nucleus lesions on, R676

to amino acid-imbalanced diet in rat, role of serotonin3 receptor, R1203

Conducted vasomotor response and arteriolar gap junctional connexin proteins, H729

Conduit arteries

aorta, properties of hypertension-induced humoral factors, H767

Congestive heart failure, see Heart failure

Connective tissue

subepithelial deposition in asthma, and neuropeptide effects on lung fibroblasts, L278

Connexins

Cx40 and Cx43, distribution in arteriolar smooth muscle and endothelium, H729

Cx45 gap junction channel, properties in hepatoma SKHep1 cell line, C356

of hepatocyte gap junctions, effects of common bile duct ligation on, C1186

Consummatory behaviors

cholecystokinin vs. amino acid effects on intake of highly nutritive diet vs. sucrose, R520

effects of neuropeptide Y on, R423

Contractile filaments

attachment to membrane, effects of contractile stimulation on attachment protein phosphorylation, C563

Contractile proteins

effects of tachycardia-induced cardiomyopathy, H2426

zero gravity effects on fast and slow isoform mRNAs, C466 Controversies

colloidal molecules, roles in Starling's hypothesis and in transcapillary flux, H2133

Copper- and zinc-containing superoxide dismutase

role in oxidant-induced injury to cardiomyocytes, H1115

Copper deficiency

cardiomyopathy in, role of intracellular copper- and zinc-containing superoxide dismutase, H1115

**Coronary arteries** 

see also Myocardial infarction; Ischemia-reperfusion

collateral angiogenesis from, effects of protamine on, H720

effects of right ventricular hypertrophy or pulmonary stenosis on infarct size, H1781

17-β-estradiol potentiation of endothelium-dependent vasorelaxation, H377

motion and deformation of nonreperfused transmural myocardial infarction 1 week later, H1304

blood flow

during postischemic reperfusion, effects of estrogen, H2569 feedback and feedforward control, model for, H895

bypass grafting, maintenance of systemic arterial pressure, H2329

endothelial cells

early effects of metabolic inhibition on permeability, H1462 substance P-induced Ca<sup>2+</sup> influx,

H962

flow amplitude, role of left ventricular pressure (Letter to Editor) H2162

hemodynamics, relation to myocardial mechanics and interstitial transport, integrating model, H633

hypoperfused, endothelin vs. adenosine effects on myocardial flow distribution, H1284

occlusion

protein kinase C modulation in, adenosine receptor subtype involved, H271

stenosis

myocardial postischemic viability, structural and metabolic correlates, H1265

vs. endothelin, effects on myocardial flow distribution, H1276

stenosis and occlusion

microvascular autoregulation after, diabetes effects on, H1667

vasodilation, norepinephrine-induced, role of endothelium-derived relaxing factor, H1973

vasomotion, effects of L-arginine analogues, H1966

Coronary artery disease

high-frequency ultrasound study of brachial artery flow-mediated vasoactivity, H1397

Coronary circulation

cholinergic and α-adrenergic vasomotor responses after ischemia/reperfusion, H886

desensitization to bradykinin relaxation, role of cGMP, H865 thyroxine-induced angiogenesis in, effect of aging on, H419

vascular resistance, modulation, role of ATP-sensitive K channels and vasoactive neurotransmitters, H1077 vasodilation, nitric oxide role during hy-

percapnic acidosis, H39

Coronary collaterals

ischemia-induced angiogenesis, effects of protamine on, H720

Coronary microvasculature

α-adrenergic constriction vs. metabolic dilation, effects of endogenous adenosine, H2487

angiogenesis in response to thyroxine, effect of aging on, H419

autoregulation after ischemia, diabetes effects on, H1667

diameter regulation, role of myogenic mechanisms, H788

endothelial cells, early effects of metabolic inhibition on permeability, H1462

Coronary veins

total microvascular flow, nutritive flow, and myocardial cooling during retrograde cardioplegia, H1555

Coronary vessels

effects of pericardial pressure on capacitance and hemodynamics, H1593 within heart muscle, pressure-area relations during diastole and systole,

H2531 Corticosteroids

see also Glucocorticoids

effects on epithelial cell secretory leukocyte protease inhibitor, L601

effects on free vs. sulfoconjugated catecholamines, in fetus vs. preterm newborn, E28

role in bicarbonate absorption in loop of Henle, F234

Corticosterone

effects on thermogenesis and lipid storage in brown adipose tissue, R183 in hormone-induced differentiation of Na\* transport across larval bullfrog skin, C218

Corticotrophs, see Pituitary gland, corticotrophs

Corticotropin-releasing hormone and ACTH release, effects of cortisol on,

in fetal hypothalamus, effects of stress and glucocorticoids, E1096

Cortisol

effects on energy expenditure and amino acid metabolism, E501

effects on fetal leucine kinetics and protein metabolism, E1114

effects on hypothalamic peptide-induced ACTH release, E85

levels in sleep, dehydroepiandrosterone effects on in humans, E107

nocturnal rise, effects on carbohydrate and fat metabolism, E595 plasma levels, after C-type natriuretic

plasma levels, after C-type natriuretic peptide infusions in sheep, R201

plasma levels, interleukin-6 effects in humans, E813

response to ACTH, effects of ACTH precursors on, in adult vs. fetal adrenal cells, E623

secretion, response to mental stress, effects of aging and depression, R865 Cotton dust

lung disease from, tannin-mediated calcium influx in alveolar macrophages, and arachidonic acid release, L33

Countercurrent multiplication

mathematical model of renal inner medulla, F680

C-peptide

kinetics of peripheral concentrations, use for study of pancreatic β-cell function, E21

Creatine

and MgADP effects on muscle force and shortening velocity, C480

Creatine kinase

kinetics in diabetic cardiomyopathy, E1070

in marine fish gill, role in ion transport and energy metabolism, R1003

and MgADP effects on muscle force and shortening velocity, C480

role in swelling-activated K-Cl cotransport in red cells, C660

Creatine phosphate

input pressure effects on, in anoxic and/or acidotic turtle heart, R683 and role of creatine kinase in swellingactivated K-Cl cotransport in red cells, C660

Crohn's disease, see Colitis

**Cross bridges** 

cardiac, kinetics, sliding filament crossbridge model analysis of quick-release contraction mechanoenergetics, H2544

kinetics, and force activation in smooth muscle, C237

role in contraction effects on relations between smooth muscle stiffness and force, C1267

viscoelastic properties, in heart muscle vs. skeletal muscle, H987

C-type natriuretic peptide

in airway, effects on ciliary beat frequency, L1021

infusions in sheep, actions and pharmacokinetics, R201

neuromodulatory effects and role of atrial natriuretic peptide C-type receptors, C978

Cyanide

effects on glycolytic metabolism in carotid artery smooth muscle, C628

hepatocyte death from, relation to mitochondrial permeability transition, C676

Cyanotic heart disease

tolerance to hypothermia alone or with cardioplegia, at various ages, H1165

Cyclic adenosine 5'-diphosphateribose

metabolism in renal epithelial cells, C741

Cyclic adenosine 5'-diphosphateribose-glycohydrolase in renal epithelial cells, C741

Cyclic nucleotide phosphodiesterase role in TNF-α effects on endothelial barrier function, C1104

Cyclic nucleotides

airway smooth muscle relaxation from, role of sarcoplasmic reticulum Ca<sup>2+</sup> ATPase, L407 non-role in anesthetic-induced airway smooth muscle relaxation, L166

and pathways mediating smooth muscle relaxation, C171

role in postpartum umbilical artery vasospasm, H202

Cyclin-dependent kinases

pulmonary activation during recovery from hyperoxia, L625

Cyclins

A- and D-type, pulmonary induction during recovery from hyperoxia, L625

Cycloheximide

effects on Na-K-Cl cotransport in cerebral vascular endothelial cells, C747

effects on prolactin-mediated sodiumtaurocholate, cotransport in hepatocyte, G11

Cyclooxygenase

constitutive and inducible isoforms, in alveolar vs. peritoneal macrophages, L294

and effects of hepatic hypoxia on  $E.\ coli$ induced TNF- $\alpha$  expression, G311

effects of inhibition on eosinophil chemotaxis and airway narrowing, L446

role in anesthetic-induced airway smooth muscle relaxation, L166 source of, in bradykinin-induced cerebral vasodilation, H458

Cyclooxygenase inhibition

acute, effects on renal hemodynamics and blood flow autoregulation, F468 and hyperoxia, roles in regulating pul-

monary perfusion, H1521 renal responses to, role of chloride, F561

Cyclooxygenase products

role in bronchial neuroeffector control and airway hyperresponsiveness, L47

Cyclopiazonic acid

effect on endothelial [Ca<sup>2+</sup>]<sub>i</sub> and Ca<sup>2+</sup> entry, H138

Cyclosporin A

and cyanide-induced hepatocyte death, relation to Ca<sup>2+</sup> and mitochondrial permeability transition, C676 Cyclosporin analogue

P-glycoprotein-mediated proximal tubular secretion, F46

Cystic fibrosis

adenosine A<sub>1</sub> receptors in airway epithelial cells, C1520

 $\begin{array}{c} \alpha\text{-}adrenergic\text{-}stimulated\ NaCl(K)\ cotransport\ in\ airway\ epithelial\ cells,}\\ L414 \end{array}$ 

cAMP- vs. Ca<sup>2+</sup>-regulated chloride conductance in oviduct of normal vs. cystic fibrosis mice, C708

distal airway transepithelial Cl<sup>-</sup> secretion and submucosal gland number, L526

gastric emptying of oil and aqueous meal components, effects of posture, G925

gastrointestinal ion transport defects, G505

gene transfer, adenovirus-mediated, to bronchial submucosal glands, L657

increased expression of sulfated glycoprotein gp300 and acinar pathology in CFTR(-/-) mice, G717 mouse model, bioelectric features vs. humans, C297

possible therapy with butyrate-induced overexpression of ΔF508 mutant, L615

presence of migration inhibitory factorrelated proteins MRP8 and MRP14 in pancreatic cell lines, C1241

Staphylococcus aureus stimulation of airway epithelial cell interleukin-8 for neutrophil recruitment, L85

Cystic fibrosis transmembrane conductance regulator

adenosine 3',5'-cyclic monophosphateindependent regulation by cytoskeleton, C886, C1552

in cardiomyocytes, dialysis effects on autonomic regulation, H1795

chloride conductance activation by extracellular ATP, C425

and Cl<sup>-</sup> channels in nonpigmented ciliary epithelial cells, C572

currents in pancreatic ducts, regulation by protein kinase C, C823

dogfish homologue, and cAMP-mediated Cl<sup>-</sup> conductance, C70

epithelial and cardiac isoforms, rectification and permeation, C636

ΔF508 mutant, butyrate-induced overexpression, L615

 $\Delta F508$  mutant, in airway epithelial cells, effect of low temperature, C243

low-conductance anion channel in Cl<sup>-</sup> secreting cells of teleost fish, R963 and migration inhibitory factor-related

proteins in pancreatic cell lines, C1241

possible presence in mouse mandibular salivary duct, G806

role in electrogenic chloride secretion in inner medullary collecting duct cell line mIMCD-K2, F854

Cystine transport

in alveolar type II cells, L21

Cytidyltransferase

in alveolar type II cells, effects of  $H_2O_2$ , L129

Cytochrome P-450

role in regulating voltage-gated K\* channels in pulmonary artery myocytes, C259

side-chain cleavage enzyme, insulin upregulation in glomerulosa cells, E100

Cytochrome-c oxidase inhibition during hypoxia, L918

Cytokine-binding proteins in lung (review), L869

Cytokine-induced neutrophil chemoattractant

effects in lung inflammation, L245

Cytokines

astroglial nitrite formation from, effects of angiotensin II on, C700

early response vs. immune-associated, chemokines induced by, in pulmonary stromal cell populations, L856

effects on transcription factor-DNA binding, role in glucocorticoid action, C331

induction of NO oxidation products in fetal type II cells, L501

lung and plasma levels during acute phase response to influenza A virus, R78 Cytokines (continued)

metabolic effects during fed state and role of interleukin-1, E255

nitric oxide synthase induction by, in cardiac microvascular endothelial cells, H1293

and osteogenic response to mechanical stimulation, E318

peripherally released, mechanisms of effects on brain, R1327

release from glomerulosa cells and factors regulating release, E114 superoxide dismutase induction in bron-

superoxide dismutase induction in bronchial epithelial cells, effects on later oxidant exposure, L71

Cytolysis

of endothelial cells under varying oxygenation states, H749

Cytoplasmic motility

of alveolar macrophages, in parainfluenza type I (Sendai) pneumonia, role of NO, L399

Cytoskeleton

see also Microtubules

adenosine 3',5'-cyclic monophosphateindependent regulation of CFTR, C1552

coupling to urokinase receptor, C1062 effects of tachycardia-induced cardiomyopathy, H2426

endothelial, changes at histamine-induced leakage sites, H316

interaction with membrane, and tracheal smooth muscle contraction, C563

organization in smooth muscle cell, role in relations between stiffness and force during contraction, C1267

in pancreatic acinar cells, effects of supramaximal secretagogue stimulation, G328

role in pulmonary capillary endothelial cell configuration and barrier function, L753

Cytosol

redox state, myocardial, effect of substrates on, H82

Cytotoxins

Clostridium difficile toxin B, actin filament disassembly by, role of calcium influx, G487

D

Daunomycin

proximal tubular transepithelial secretion, effect of heat shock, F135

Dedifferentiation

of postischemic dysfunctional cardiomyocytes, H1265

Defecation

patterns in unrestrained ambulatory dogs, 24-hour study, G650

Defibrillation threshold determination

epicardial potential gradient field for shocks during fibrillation vs. paced rhythm, H2336

Deglutition

oropharyngeal, in cat, videofluoroscopy and electromyography, G232

Dehydration

inner medullary collecting duct adaptations, F53

thermal sweating response to drinking of water, R414 Dehydroepiandrosterone

and calcitonin gene-related peptide, effects on thymocyte proliferation, E168

effects on lipolysis to  $\beta$ -adrenergic stimulation, R1374

effects on sleep, electroencephalogram, and nocturnal hormones in humans, E107

Delayed afterdepolarizations

β-adrenergic-induced, effects of α<sub>2</sub>-adrenergic stimulation, H2024

Denervation

peripheral, effects on skeletal muscle glucose uptake after N-methyl-Daspartate intracerebrally, R492

2-Deoxy-D-glucose

feeding response to, effects of parabrachial nucleus lesions on, R676

Depolarization

of membrane potential, in arterial smooth muscle excitation-contraction, H74

**Depolarizing bursts** 

effects on current-induced early afterdepolarizations in ventricular myocytes, H2440

Depression

mental, effects on adrenal and cardiovascular responses to mental stress, R865

Desensitization

phosphoinositide synthesis in desensitized pancreatic acinar cells, G1043

Desert animals

Bedouin goat, metabolic adaptations to reduced food intake, R1101

Development, see Growth; Maturation; Lung, development

Dexamethasone

effects on cytokine-induced NO synthase in cardiac microvascular endothelial cells, H1293

effects on pulmonary  $\beta_2$ -adrenoceptor transcription rate, L41

effects on surfactant protein B gene transcription and mRNA stability in fetus, L481

effects on tropoelastin expression during fetal lung development, L491

regulation of albumin gene expression in hepatocytes, E6

synergism with 8-bromo-cAMP in stimulating angiotensinogen gene expression, R105

Dextran, see Hypertonic saline-dextran

Dextran sulfate

effect on hepatocyte growth factor/scatter factor plasma levels, G380

Diabetes

blood-nerve barrier permeability, hyperglycemia, and endoneurial mast cell degranulation, H740

cardiomyopathy from, creatine kinase kinetics in, E1070

effects on coronary microvascular autoregulation after ischemia, H1667

hyperglycemic glomerular dysfunction and proteinuria, role of glycosylated serum proteins, F913

insulin-dependent, effects of nocturnal cortisol rise on carbohydrate and fat metabolism, E595 insulin-dependent and non-dependent, cholecystokinin insensitivity and amylase increase in genetically diabetic rat, E531

and insulin-induced release of plasminogen activator from platelets, H117

metabolic and antidiabetic effects of  $\beta_3$ adrenergic agonist BRL-35135 in
obese mice, E678

nephropathy, periodic high extracellular glucose and mesangial cell collagen production, F13

non-insulin-dependent

endothelial-dependent vasodilation in, H2366

relation of skeletal muscle fiber type to obesity and insulin-induced glucose transport, E453

succinic acid monomethyl ester protection from impaired B-cell response to glucose, E580

tolbutamide modulation of hepatic 6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase, E391

overexpression of GLUT-4, effects on glucose metabolism and fatty acid synthesis, E956

renal hyperfiltration in, renal hemodynamic effects of ACE inhibitors and role of kinins, F588

streptozotocin-induced

effects of brain serotonin depletion, E839

insulin resistance in, role of proteintyrosine phosphatases, E932

type 1, estimated glucose utilization rate, E766

vascular complications, glutathione effects on hyperglycemia-induced hemodynamic changes, E1167

Diacylglycerol

role in lithium potentiation of angiotensin II-stimulated vasoconstriction, H2009

role in strain-induced fetal lung cell increase, L729

1,2-Diacylglycerol

formation in mesangial cells, role of phosphatidic acid, F997

Diapedesis, see Cell migration; Neutrophils, endothelial interactions

Diaphragm

mechanics of phrenic ampullary emptying, G320

necrosis in dystrophic hamster, thyroxine effects on, R779

sarcoplasmic reticulum calcium pump, in cardiomyopathic hamster, effects of perindopril, H1947

Diarrhea

changes in distal colonic electrolyte transport and inflammation indexes during colitis, G622

enteropathogenic *E. coli* effects on intestinal tight junction barrier function, G374

food protein-induced GI allergy, effects on colon longitudinal muscle contractility, G764

simulated, effects on proximal colonic tone, G95

Dicarboxylate/cholate antiport system basolateral, in hepatocytes, G797 Dichloroacetate

effects on carbohydrate metabolism and systolic function in ischemic heart, H879

Diet composition

composition and caloric content, effects on hyaluronan serum levels in rat,

relation to food intake and metabolism in parabiotic partner of obese rat, R874

#### Dietary components

see also Nutrients

amino acids, imbalance in diet, conditioned taste aversion in rat, role of serotonin<sub>3</sub> receptor, R1203

carbohydrate or fat, effects on jejunal lactase gene expression, G1066

fat and protein levels, role in obesity, vs. genetics, R658

fat, dose-response relation to body fat deposition, E546

fatty acids, effects of fish oil supplement on age-related immune dysfunction,

high-fat, effects on pyruvate dehydrogenase response to changes in plasma glucose and insulin, E752

oil, from corn, linseed, or fish, effects on clearance of oxidatively modified chylomicrons, G709

phosphate, regulation of renal Na-Pi cotransporter, F626

potassium and sodium intakes, and potassium's cardiovascular protective mechanisms (review), R825

protein, effects on renal function and renal microcirculatory effects of angiotensin II, F302

protein level, effects on protein metabolism in elderly, E1143

protein restriction

during pregnancy, effects on insulin actions, E722

in renal failure, long-term adaptive changes in whole body protein turn-

sodium

effects on endogenous lithium clearance, F718

effects on protein-induced dopaminergic renal excretory responses, aging effects on, F613

sodium, and cardiopulmonary baroreflex control of renal sympathetic nerves, H61

Dietary deficiencies see also Malnutrition

copper, cardiomyopathy in, role of intracellular copper- and zinc-containing superoxide dismutase, H1115

diet restriction, long-term effects in nonhuman primates and changes with age, E941

fatty acids, effects on renal sensory receptors, R164

inorganic phosphates, effects on renal Na+-Pi cotransporter in X-linked Hyp mice, F1062

low-protein diet, effects on urea transport in inner medullar collecting ducts, F1218

phosphate deprivation, and renal nerveprostaglandin interaction during parathyroid hormone-induced phosphaturia, R731

phosphates, adaptation of Na+-Pi transporter, effects of hypophosphatemia,

potassium, effects on ouabain-sensitive K+-ATPase in rat nephron, F1141

protein, effects on hepatic amino acid transport in suckling rats, E368

selenium, and sulfation metabolism of thyroid hormones, E572

sodium, adrenal glomerulosa cell growth responses to angiotensin II, E135

sodium restriction, effects on endogenous central opioid role in sodium and water balance, R723

1α,25-(OH)<sub>2</sub>D<sub>3</sub>, in uremia, and kinetics of extrarenal 1α-hydrolase, F746 zinc, sensitization of nociceptive C-fi-

bers, R1423 Diethylmaleic acid

effects on cystine transport and glutathione levels in alveolar type II cells, L21

Diethylstilbestrol, see Estrogens Differentiation

see also Cell differentiation

expression and modulation of potassium conductance in developing skeletal muscle, C490

of Na+ transport, in larval bullfrog skin, hormonal inducers, C218

Digestion

vagovagal reflex control (review), G1

Digestive enzymes

pancreatic

and effects of supramaximal secretagogue stimulation on acinar cell cytoskeleton, G328

periodicity of secretions, regulatory mechanisms, G251

roles of somatostatin, acetylcholine, and cholecystokinin in regulation, E349

Digoxin

effects on energy expenditure and nutrient oxidation rate, E1051

Dihydropyridine

and voltage-dependent Ca2+ channel role in hypoxia-induced airway smooth muscle relaxation, L201

Diltiazem

effects on phenylalanine-induced intestinal cholecystokinin secretion, G90

Dimaprit

colonic short-circuit current increases from, role of VIP-ergic and cholinergic neurons, G465
NG,NG'-Dimethyl-L-arginine

endogenous. NO synthase inhibition in postcapillary venules, inflammatory effects, H2224

Disseminated intravascular coagulation

role in generating heme iron-derived reactive oxygen species, L321

Diuresis

pressure response, decrease in hyperthyroidism, role of renin-angiotensin system, E897

DNA

see also Gene transfer; Genes

injury and repair after H2O2 exposure, in tracheal epithelial vs. mesothelial cells, L832

strand breaks in, relation to reactive oxygen species in asbestos-induced lung injury, L471

synthesis in regenerating liver effects of bile acids and role of amidation, G1051

role of salivary glands, G872

**DNA** sequence elements

and tissue-specific expression of lipoprotein lipase, E213

Dobutamine

effects on energy metabolism and systolic function in ischemic right ventricle, H1821

Dopamine

effects on protein phosphatase 1 and Na+-K+-ATPase in proximal tubule, F279

production and metabolism in liver, mesenteric organs, and kidney, G641

production by kidney, effects of aging on, F1087

protein-induced dopaminergic renal excretory responses, aging effects on,

Dopamine receptors

DA<sub>1</sub>, in proximal tubules, photoaffinity labeling differences in normotensive rat and SHR, F1009

localization in rat kidney, F1185 in renal epithelial LLC-PK1 cells,

D<sub>1</sub>, in proximal tubule, defective coupling to adenylate cyclase in Dahl rats, R231

Dorsal root ganglion cells

effects on cultured airway epithelial cells, L957

Drinking, see Water intake; Ethanol drinking

Drug abuse

brain injury after, posttraumatic blood pressure and cerebral blood flow,

hepatic lysosomal transport of organic cations, G480

pharmacokinetics, pharmacodynamics, allometry, and dosage determinations, concentration-response relationship of, R85

Drunken sheep, R1526

Duchenne muscular dystrophy prednisone effects on protein metabolism, E67

Duodenum

motor activity, relation to surface electrogastrography, G424 peptide YY trophic actions, G71 pH, effects on interdigestive migrating myoelectric complex, G146

middle ear, oxidant-induced changes in transepithelial ion transport, L390

Early gene expression, see Protooncogenes

**Eating behavior** 

see also Food intake

effects of NO inhibition, R1533

**Echocardiography** 

for teaching cardiac physiology, S2

**Ecto-ATPases** 

in small intestine brush-border membranes, G663

Edema

after myocardial infarction, mechanisms of ischemic preconditioning benefits, H233

pulmonary

from botulinum C2 toxin, role of endothelial cytoskeleton, L753 IL-1-induced, protective effects of prior IL-1, L12

Education

achievement in anatomy and physiology course

and Gregorc learning style indicator results, S56

and Myers-Briggs psychological type indicator results, S61

active learning

active learning in context, S75 active learning (letter), S81 andragogical vs. pedagogical, S66 analysis of published papers, checklist,

biochemical principles based on chemical flow dynamics, S40

cell membrane potential, demonstration in living Xenopus laevis oocyte, S26 echocardiography for teaching cardiac

physiology, S2

kidney function in laboratory rat, student exercise, S49

learning by writing (editorial), S1, S81 mathematical model of oxygen transport: teaching aid adaptable to extracorporeal oxygenation, S32

student laboratory on osmosis and reflection coefficient, S10

teaching physiology as integrative science (letter), S81

teaching physiology by lectures plus pedagogy (multiple-choice exams) vs. andragogy (essays), S66 Workshop on Teaching Physiology, July

1993, abstracts, S84 Eels

cardiovascular effects of vasotocin, atrial natriuretic peptide, and epinephrine, R1273

egr

and lipoxygenase inhibitor effects on platelet-derived growth factor-induced mitogenesis, C604

**Eicosanoids** 

biosynthesis, roles of leukotriene B4 and extracellular Ca2+ in phospholipase A<sub>2</sub> activation, C138

precursors from GI uptake and interconversion of plasma n-3 polyunsaturated fatty acids, G732

synthesis during neutrophil-glomerular endothelial cell interactions, F1

synthesis in cardiomyocytes, effects of hypoxia, reoxygenation, and n-3 fatty acids, H308

Eicosapentaenoic acid

vs. arachidonic acid, pressor response and thromboxane B2 release in pulmonary hyertension, H2252

activation in pancreatitis, role of ATP and glutathione decrease, G592

plasma levels in elderly after inflammatory stress, effects of dietary fish oils, R208

stimulation of secretory leukocyte protease inhibitor in airway cells, corticosteroid effects on, L601

Elastin

alveolar, role in smoke-induced emphysema, L17

fetal lung production, role of glucocorticoids in, L491

Electroencephalogram

during sleep, effects of endotoxin on, R1310

in sleep, dehydroepiandrosterone effects on in humans, E107

Electrolyte transport

in distal colon, time course of disruption and recovery during colitis, G622

**Electromagnetic fields** 

conflicting study results, reconciling by chaos theory, R1013

**Electromechanical coupling** in arterial smooth muscle excitationcontraction, H74

**Electron transport** 

inhibition, hepatocyte death from, relation to Ca2+ and mitochondrial permeability transition, C676

**Embolism** 

pulmonary hypertension from, Starling resistor vs. distensible vessel models, H817

**Embryo** 

see also Maturation

coronary neovascularization in, role of thyroid hormones, H811

metanephric apoptosis and kidney maldevelopment in bcl-2-deficient mice,

**Emphysema** 

smoke-induced, alveolar collagen breakdown and repair, L17

expression by pulmonary stromal cell populations, L856

**Enalapril** 

effects on intracellular sodium and pH, C366

Endocardium

endothelial cells, vs. great vessel cells, morphology, growth, prostaglandin release, H250

**Endocrine system** 

response to water immersion in rhesus monkey, effects of cardiac denervation, R1040

Endocytosis

caveolae-mediated, inhibition by N-ethylmaleimide, H48

of β<sub>2</sub>-microglobulin in proximal tubule cells, endosomal convergence of apical and basolateral pathways, F829

of Na-Pi cotransporter in proximal tubule brush-border membrane, F784

receptor-mediated vs. fluid-phase, in proximal tubule cells, effects of endosomal pH, F899

Endoderm

G protein role in development, C1460

Endometrium

blood flow, vs. myometrial blood flow, measuring in small animals, R569

**Endoneurocrine factors** 

role in vagovagal reflex control of digestion (review), G1

Endopeptidases

cathepsin L, role in intrinsic factor degradation, G33

Endoplasmic reticulum

Ca2+-ATPase, role in glucose modulation of renal [Ca2+], F671 rough, biochemical quantitation, C308

Endosomes

alkalinization, effects on receptor-mediated albumin endocytosis in proximal tubule cells, F899

**Endothelial barrier** 

high-permeability, LDL solvent drag and sieving, H1982

**Endothelial cells** 

see also Leukocytes, endothelial interactions; Neutrophils, endothelial interactions

actin cytoskeleton changes at histamineinduced leakage sites, H316

aortic, effects of shear stress on hydraulic conductivity, H535

barrier functions, effects of TNF- $\alpha$  and role of cAMP levels, C1104

cardiac microvascular, cytokine-inducible NO synthase in, H1293

cerebrovascular, mechanisms of hypercapnia-stimulated prostaglandin synthesis, H591

constitutive NO synthase gene expression, regulation during lung development, L589

corneal, cation channel activation during wound healing, C1179

coronary

early effects of metabolic inhibition on permeability, H1462 substance P-induced Ca2+ influx, H962

coronary venular, oxidative stess effects on glutathione and on HSP 70 mRNA and protein, H1651

culture on gelatin vs. Matrigel, effects on morphology and gene expression, H1613

endocardial

electrophysiology, H2036 vs. great vessel: morphology, growth, prostaglandin release, H250

interactions with leukocytes, in glomeruli, lipoxygenase product formation and cell adhesion, F1

interleukin-8-induced transcellular eosinophilic chemotaxis, L117

leukocyte adherence

in pulmonary artery, nucleotidestimulated, role of ATP-binding proteins, L666

in trachea, role of neurokinin receptors and relation to plasma leakage,

neurokinin receptors, role in substance P-increased microvascular permeability, R1060

neutrophil adherence, in pulmonary artery, nucleotide-stimulated, role of ATP-binding proteins, L666

possible role in cardiomyocyte uptake of long-chain fatty acids, H1659

posthemorrhagic function, ATP-MgCl<sub>2</sub> effects on, H1390

pulmonary

hemoglobin-induced heme oxygenase and ferritin induction, L321 role of actin in maintenance of integrity, L753

of pulmonary artery

barrier function, mechanisms of disruption by pertussis toxin, L926 chemokine expression by, L856 cultured human, effects of endotoxin

on, L239 cyclopiazonic acid-augmented Ca2+

entry, H138 of pulmonary microvessels, hypoxiastimulated capillary network forma-

tion, L789 shear stress at luminal surface of flowaligned and nonaligned monolayers, subcellular analysis, H1765

of umbilical vein, hormone-induced cAMP production, bile acid effects on, G908

vascular

cerebral, Na-K-Cl cotransport in, astrocyte efects on, C747

effects of α-thrombin and thrombin receptor-activating peptide on

[Ca<sup>2+</sup>]<sub>i</sub>, C36 fibrin and fibrinogen effects on endothelium-derived relaxing factor production, C520

functional responses to varying oxygenation states, H749

oxidant inhibition of Ca2+ signaling in, modulation by glutathione peroxidase reductant substrate, H278

presence and secretion of atrial natriuretic peptide, H921

sodium-potassium pump energetics, H351

xanthine dehydrogenase/xanthine oxidase in, effects of nitric oxide and cell redox status, L809 Endothelial growth factor

vascular, sites of expression in fetal and adult kidney, F240

**Endothelin receptors** 

binding by endothelin-1 in alveolar epithelial cells, L192 in myometrial cells, E825

perichondrial localization and role in chondrogenic differentiation, C496

role in hypoxia-induced pulmonary hypertension, L95

on tracheal epithelial cells, L424 ETA and ETB, antagonist effects in guinea pig airway, L846

ETA and ETB, roles in renal hemodynamics and sodium excretion, F455

ETB, vasopressin downregulation in cortical collecting ducts, F385 and juxtaglomerular renin release, sub-

type involved, F39 role in pressure overload cardiac hypertrophy, H2084

subtypes present in newborn piglet pulmonary vasculature, L607

in veins, subtypes and effects of blood flow and oxygen tension, H345

Endothelins

see also Endothelium-derived contracting factors

actions on parietal sheet of renal glomerulus, F1053

endogenous, regulation of cardiac contractility, H1621

ET-1

coronary artery PKC activation by, effect of adenosine receptors, H271 distribution in aortic endothelial cells and culture medium, vs. atrial natriuretic peptide, H921

effects on myocardial transmural flow distribution, vs. stenosis, H1276 effects on pHi in vascular smooth

muscle, C580

endothelin receptor ETA-type binding sites on tracheal epithelial cells, 1.424

long-term effects on cardiovascular and renal function, role of reninangiotensin system, R395

long-term effects on hemodynamics and renal function, R375

perichondrial binding and role in chondrogenic differentiation, C496 plasma vs. urinary, roles in blood volume homeostasis, H1829

production by cardiomyocytes and role in pressure overload cardiac hypertrophy, H2084

production by endothelial cells grown on gelatin vs. Matrigel, H1613

pulmonary artery contraction from, after endotoxin, modulation by endothelium, H2260

renal effects, roles of endothelin receptor subtypes  $ET_A$  and  $ET_B$ , F455 role in hypoxia-induced pulmonary hypertension, L95

role in hypoxic pulmonary hypertension, H828

role in liver injury from galactosamine and endotoxin, G997

synthesis, receptors, and signal transduction in alveolar epithelium, L192 vasopressin effects on binding to ETB receptor in cortical collecting ducts,

vs. adenosine, effects on transmural flow distribution in hypoperfused myocardium, H1284

ET-1, ET-2, ET-3: and renin release from juxtaglomerular cells, F39

ET-3, effects on endothelin-1 binding to alveolar epithelial cells, L192 ET-3, vasopressin secretion from, role of

cation channels, E467 role in physiological hemodynamics,

H432 Endothelium

> and 17-β-estradiol-potentiated vasoreiaxation of coronary artery, H377

caveolae-mediated vesicular transport, inhibition by N-ethylmaleimide,

coronary vascular, NO release during hypercapnic acidosis, H39

effects on endothelin-1-induced pulmonary artery contraction after endotoxin, H2260

effects on stretch-induced smooth muscle cell bromodeoxyuridine uptake, H1133

function, high-frequency ultrasound study of brachial artery flow-mediated vasoactivity, H1397

microvascular, recovery of endotheliumdependent dilation after injury, role of protein synthesis, H512

nitric oxide synthase in, inhibition by NO. H2216

pulmonary, heme iron-derived reactive oxygen species in, L321

role in exercise training and hypothyroidism effects on aortic vascular reactivity, H1428

role in hypoxia-induced pulmonary vasoconstriction, H301

role in sustained hypoxia-induced arterial contraction, H1015

vascular, arteriolar gap junctional connexin proteins, H729

vascular, renal distribution of constitutive NO synthase isoforms in various mammal species, F885

venular, leukocyte rolling on, subtypes involved, in vivo differentiation, H909

Endothelium-dependent vascular relaxation

acetylcholine-induced, effects of pulse pressure on, H359

**Endothelium-dependent vasodilation** 

in hepatic cirrhosis, G459 pulmonary, impairment by chronic pulmonary hypertension in utero, H288

**Endothelium-derived contracting** (constricting) factors see also Endothelins

posthemorrhagic, ATP-MgCl2 effects on, H1390

and sustained aortic contraction in prolonged hypoxia, H1015

Endothelium-derived hyperpolarizing factor

and coronary artery desensitization to bradykinin relaxation, H865

Endothelium-derived relaxing factor see also Nitric oxide

and cyclopiazonic acid-augmented Ca2+ entry into endothelial cells, H138 Escherichia coli endotoxin effects on,

H955 fibrin and fibrinogen effects on production, C520

and leukotoxin-induced pulmonary vasodilation, L123

and pulse pressure effects on acetylcholine-induced vascular relaxation,

role in coronary artery desensitization to bradykinin relaxation, H865

role in norepinephrine-induced coronary vasodilation, H1973

Endotoxin

see also Shock, septic, endotoxininduced

cardiac contractile dysfunction from, non-roles of NO and cardiac energy metabolism, H2460

effects on arterial wall production of cytokines changes with aging, H2288 effects on cultured human pulmonary

artery endothelial cells, L239 effects on cytokine-induced NO synthase in cardiac microvascular endothelial

cells, H1293 effects on endothelin-1 release by in alveolar epithelial cells, L192

#### Endotoxin (continued)

effects on endothelin-1-induced pulmonary artery contraction, modulation by endothelium, H2260

effects on nitric oxide synthase expression in inner medullary collecting duct cells, F770

effects on NO synthase induction in pulmonary artery smooth muscle, L509 effects on sleep, R1310

#### fever from

in pregnant, parturient, and lactating rats, R919

site of tumor necrosis factor-a antipyretic actions, R480

hepatic vascular hyporeactivity from, role of nitric oxide, G177

induction of NO oxidation products in fetal type II cells, L501

induction of tumor necrosis factor in lung, ethanol effects on, L991 interactions with surfactant protein A in

alveolar macrophages and type II cells, L144 intratracheal injection, effects on cyto-

kine-induced neutrophil chemoattractant expression in lung, L245 liver injury from, role of endothelin-1,

G997 lung injury from, effects on cGMP-mediated pulmonary vasorelaxation,

L1029 metabolic changes from, effects of interleukin-1 receptor antagonist, E255

nitric oxide synthase induction by, in astroglia, inhibition by angiotensin II. C700

nitric oxide synthase induction in human vascular smooth muscle, H1122

peripheral, induction of brain IL-18 mRNA, effects of vagotomy on,

tolerance to, effects on febrile response to tumor necrosis factor-α, R514

transient hypothermia from, roles of macrophages and TNF-α, R989 Endurance training, see Exercise

#### training Energetics

compartmentation, in carotid artery smooth muscle, C628

# Energy

balance

long-term regulation, reciprocal glucocorticoid and insulin effects, R142,

serotonin receptor subtypes involved in regulation, R14

conservation, as adaptation for desert survival in Bedouin goat, R1101

**Energy depletion** in cardiac ischemia-reperfusion, beneficial effects of low pHi and low [Ca<sup>2+</sup>], H1510

early effects on coronary endothelial permeability, H1462

#### Energy expenditure

2,5-anhydro-D-mannitol effects on fuel oxidation, R299

caffeine effects on, in elderly, E1192 cardiac, amount saved by quick release at peak contraction, cross-bridge model analysis, H2544

in children, role of parental obesity,

cortisol effects on, E501

in cytokine- and endotoxin-treated rats, effects of interleukin-1 receptor antagonist, E255

digoxin effects on, E1051

interleukin-6 effects on, in humans, E813

# **Energy metabolism**

brain glucose utilization rates in active and hibernating squirrels, R445

in fish white muscle, during hypoxia and recovery, R1178

in marine fish, role of phosphocreatinecreatine kinase circuit, R1003

in ischemic right ventricle, effects of inotropic stimuloation, H1821

mitochondrial enzymes in newborn proximal convoluted tubule, developmental regulation by thyroid hormones, F634

myocardial phosphate responses to progressively higher workloads, H1891 non-role in endotoxin-induced cardiac

contractile dysfunction, H2460 sodium-potassium pump in endothelial-

cell energetics, H351 in vascular smooth muscle, consequences of change from lactate pro-

duction to glucose oxidation, H713

#### **Energy requirements**

gestational requirement calculations, importance of body density and body water in body fat estimates, E153

#### **Enkephalins**

see also Met-enkephalin

cardiac, Met-enkephalin-Arg-Phe, effects on vagal control of heart rate, H848

#### Enteric nervous system

inflammatory changes in smooth muscle regulation, G823

influence on jejunal chloride secretion in normal and cystic fibrosis mice, G505

vagovagal reflex control of digestion (review), G1

#### Enterocytes

cell differentiation studies, use of Moluccella laevis lectin as marker, G553 differentiation, role of laminin and me-

rosin, G857

glucose transport in brush-border membrane vesicles, polyamine effects on,

glutamine and glucose metabolism in newborn, R334

ischemic effects on cellular and mitochondrial respiration, G116

respiration rates after graded ischemia, G116

sodium-coupled nutrient transport, Na+ pump, membrane conductances, and apical membrane potential,

#### Eosinophils

airway contraction from, measuring by computerized videomicrometry,

chemotaxis in airways, effects of inhibiting 5-lipoxygenase and cyclooxygenase, L446

endothelial-cell adhesion in trachea, role of neurokinin receptors and relation to plasma leakage, L263

interleukin-8-induced chemotaxis through endothelium and epithelium, L117

#### **Epicardium**

action potential configuration and transient outward current, developmental changes, H2513

myocyte phase 1 repolarization and transient outward K+ current in Chagas' cardiomyopathy, H1258 **Epidermal** growth factor

cytokine-binding proteins in lung (review), L869

from salivary glands, role in liver regeneration, G872

inhibition of sodium gradient-dependent phosphate transport in opossum kidney epithelial cells, F309

in neonatal ureteral obstruction, regulation by AT<sub>1</sub> receptors, F1117

and pulmonary artery cell proliferation in normotensive vs. pulmonary hypertensive rats, L465

renal, stimulation by triiodothyronine, F128

transcription regulation by upstream promoter, F664

# Epidermal growth factor receptor

and pulmonary artery cell proliferation in normotensive vs. pulmonary hypertensive rats, L465

#### **Epinephrine**

see also Catecholamines

cardiovascular effects in eels, R1273 effect on muscle glycogenolysis during exercise, E127

effects of local infusion on muscle glucose and protein metabolism, E55

effects on hepatic tumor necrosis factor and interleukin-6 production, R896 effects on hypoxic fish gill arterioarterial and arteriovenous branchial vascu-

lature, R771 effects on plasma glucose and free fatty acids in fish, R1163

free vs. sulfoconjugated, in fetus vs. preterm newborn, effects of corticosteroids, E28

#### **Epithelial cells**

see also Alveolar cells, type II of airway

adenovirus-mediated gene transfer in human fetal lung ex vivo, L839

α-adrenergic-stimulated NaCl(K) cotransport in, role of protein kinase C. L414

cAMP production and adenylate cyclase activity, tannin effects on,

CFTR-mutant, effect of low temperature on ion channels, C243

ciliary motility, C-type natriuretic peptide effects on ciliary beat frequency, L1021

ciliary motility, nitric oxide-dependent, effects of TNF-α and IL-1β,

human CC10 gene expression and evidence of link to asthma, L565

human, in vitro culture systems (review), L347

intercellular calcium waves, role of inositol trisphosphate diffusion, two-dimensional model, C1537

interleukin-8 from, Staphylococcus aureus stimulation for neutrophil recruitment, L85

normal and CF, adenosine  $A_1$  receptors, C1520

proliferation in coculture with dorsal root ganglion cells, L957

secretory leukocyte protease inhibitor in, corticosteroid effects on, L601

of airway submucosal glands, adenovirus-mediated transgene delivery, L657

of alveoli

endothelin-1 synthesis, receptors, and signal transduction in, L192

induction of A- and D-type cyclins and cyclin-dependent kinases during recovery from hyperoxia, L625

of bronchi

cigarette smoke effects on migration and matrix attachment, L723 ciliary motility, ethanol effects on, role

of nitric oxide, L596

cytokine-induced superoxide dismutase in, effects on later oxidant exposure, L71

fibronectin production, effects of insulin, L230

stimulatory effects of hepatocyte growth factor and changes in neoplasia, L1012

virus effects on migration and matrix attachment, L214

ciliary nonpigmented

regulatory volume decrease mechanisms, C721

staurosporine-activated Cl<sup>-</sup> channels and pI<sub>Cln</sub> homologue in, C572 colonic

NAD-dependent 11β-hydroxysteroid dehydrogenase, C1467

tyrosine kinase role in carbachol-regulated Ca entry, C154

of colonic crypt, prostaglandin E<sub>2</sub> receptors, properties, G270

in fetal lung

adenovirus-mediated gene transfer in human fetal lung ex vivo, L839

bioelectric properties and chloride secretion, L270

integrins as collagen-binding receptors, L136

ion transport in, effects of mesenchymal-cell extracellular matrix, L762 of gastric mucosa, restitution after injury, role of NO, G933

gastric parietal, protein kinase A-activated Cl<sup>-</sup> channel, C191

gastrointestinal

differentiation studies, use of Moluccella laevis lectin as marker, G553 distribution of prolactin and growth hormone receptor transcripts and

isoforms, G431 interleukin-8-induced transcellular eosinophilic chemotaxis, L117

intestinal

arginine transport by, changes with differentiation, G578

enterocyte differentiation, role of laminin and merosin, G857 phenylalanine-induced secretion in, role of calcium, G90

regulation by TGF- $\beta$ 1 vs. insulin, E1199

tight junction permeability, effects of nitric oxide on, G361

vitamin A trafficking in, roles of cytoplasmic retinol binding proteins, G224

intestinal (T84)

ATP-activated ion conductance and signal transduction pathways, C425 neutrophil migration across, polarity of early adhesion, C472

tight junction barrier function, enteropathogenic *E. coli* effects on, G374

middle-ear SV40-transformed, oxidantinduced changes in ion transport, L390

pancreatic goblet, degranulation, neurohumoral control, G24

proximal tubule, angiotensin II AT<sub>1</sub> receptor-coupled signaling and growth responses, C925

of proximal tubule, somatolactin effects on P<sub>i</sub> and Ca<sup>2+</sup> transepithelial transport in flounder, R577

pulmonary, asbestos-induced injury, role of reactive oxygen species and DNA strand breaks, L471

rectification and permeation in CFTR epithelial and cardiac isoforms, C636

retinal pigment

apical membrane inwardly rectifying K<sup>+</sup> conductance, C1164 cell volume regulation mechanisms,

C89

role of G proteins  $G\alpha_q$  and  $G\alpha_{13}$  in  $Ca_i$  and Na/H exchanger NHE-1 regulation, C101

small intestinal, glutamine effects on glucose oxidation, G879

sodium channels, in leech dorsal skin, regulation and bioelectric properties, R605

of trachea

 $\alpha$ -adrenergic-stimulated NaCl(K) cotransport in, role of protein kinase C, L414

DNA injury and repair after  $\rm H_2O_2$  exposure, vs. mesothelial cells, L832 endothelin receptor  $\rm ET_A$ -type binding sites for ET-1, L424

ozone effects on [Ca<sup>2+</sup>]<sub>i</sub> and mechanisms involved, L558

nisms involved, L555 of trachea and nasal polyps, α-adrenergic-stimulated NaCl(K) cotransport in, role of protein kinase C, L414

of uterine cervix, nucleotide receptors with opposing effects on permeability C1215

ity, C1215 Epithelial cells, renal

amiloride-sensitive and bicarbonate-dependent ion transport, aldosterone and vasotocin effects on, C762

of collecting duct

electrogenic chloride secretion, cellular mechanisms, F854

potassium transport and transepithelial voltage, effects of basolateral acidosis, F490 principal cells, sodium channels, feedback regulation and response to cAMP, F480

crystal adhesion, inhibition by urinary anions, F604

cyclic ADP-ribose metabolism in, C741 of distal nephron, vasotocin effects on whole cell currents, F64

from autosomal dominant polycystic kidney, presence of water channel proteins, F398

from opossum kidney tubules, epidermal growth factor inhibition of Na-P<sub>i</sub> cotransport in, F309

glomerular angiotensin II-induced changes, morphometric analysis, F82

interleukin 1β effects on laminin B2 chain mRNA and nuclear factor κB, F273

tight junction formation, tyrosine phosphorylation of protein ZO-1, F514

glucose modulation of [Ca<sup>2+</sup>]<sub>i</sub>, role of endoplasmic reticulum Ca<sup>2+</sup>-ATPase, F671

gluconeogenic substrains, phosphoenolpyruvate carboxykinase subcellular sites. C449

GTP hydrolysis by apical membranes, aldosterone effects on, C557

human sodium channel β- and γ-subunits, cloning, chromosomal location, and characterization, C1157

LLC-PK<sub>1</sub>, D<sub>1A</sub> dopamine receptor gene, F423

membrane polarity, problems with cell surface biotinylation protocol, F285

permeability, regulation by tumor necrosis factor-α, role of cAMP and protein kinase A, F315

proximal tubular

guanosine 3',5'-cyclic monophosphateactivated Cl $^-$  channel, F323  $\rm H_2O_2$  damage, role of lipid peroxidation, F30

β<sub>1</sub>-adrenergic receptors on, F553 renal and bladder, vesicle fusion proteins in, C792

renal tubular, peptide transport in, H\*dependent, calmodulin-regulated system in MDCK cells, F391

stretch-activated sodium channel protein, C1450

Epithelium

of airway, neuropeptide receptor distribution, L584

corneal, outgrowth modulation by opioid growth factor, R942

mechanisms of histone cytotoxicity, C1114

oral, and lingual trigeminal nerve sensitivity to acids, R58

oviductal, cAMP- vs. Ca<sup>2+</sup>-regulated chloride conductance, in normal vs. cystic fibrosis mice, C708

of small intestine, crypt-villus axis organization and stem cell hierarchy during development in mouse, G813

tracheal, barrier function, oxidant effects on permeability and repair, L284

5,6-Epoxyeicosatrienoic acid

effects on ion transport in collecting duct and role of prostaglandins, F931 Erectile effect

perfusion pressure effects on papillary muscle diastolic stress-strain relations, H945

Erythrocytes

aggregation effects on erythrocyte flow dynamics in microvessels, H1959

role in rheological behavior of blood in low-shear tube flow, H25

deformability

changes in sickle cells, roles of hemoglobin polymerization and membrane defects, H2003

effect on myocardial tissue hematocrit gradient, H260

lactate influx mechanisms, in athletic vs. nonathletic species, R1121

membrane permeability to ammonia, study by saturation transfer nuclear magnetic resonance, C686

in mouse, cation transport and regulatory volume decrease, C894

swelling-activated K-Cl cotransport, role of creatine kinase, C660 swelling-activated K+ and Cl- transport,

in lampreys, R590 urea-activated K-Cl cotransport

in humans, C1018 significance for swelling-activated transport, C1026

Erythroid band 3 protein, see Anion exchangers, AE1 Erythropoietin

metabolism during pregnancy, increased synthesis vs. decreased clearance, R1117

and regulation of angiogenic growth factor, C1362

Escherichia coli

endotoxemia from, effects on aortic release of endothelium-derived relaxing factor and NO, H955

enteropathogenic, effects on intestinal tight junction barrier function, G374

enterotoxin effects on cGMP in Caco-2 cells, G361

hepatic TNF-α expression from, effects of hypoxia-reoxygenation, G311 Esophagogastric junction

mechanics of phrenic ampullary empty-

Esophagogastric reflux

aging effects on esophageal secondary peristalsis and sphincter pressures,

objective criteria for defining transient lower esophageal sphincter relaxation, G128

Esophagus

aging effects on secondary peristalsis and sphincter pressures, G772

circular muscle, transient outward current, G979

circular smooth muscle, nonadrenergic noncholinergic inhibitory junction potentials, roles of NO and K+ channels, G831

lower sphincter

hemoglobin effects on, G443 nitric oxide synthase immunoreactive nerves, G59

serotonin effects on, receptor subtypes involved, G1004

transient relaxation, objective criteria for defining, G128

nitric oxide pathway and neuronal coexistence with VIP, G59

oropharyngeal swallowing in cat, videofluoroscopy and electromyography, G232 peristalsis, hemoglobin effects on, G443 upper sphincter, function during swallowing, aging effects on, G389

Essential fatty acids, see Fatty acids, essential

Estivation

in land snail, metabolic depression, and antioxidant defenses, R1386

effects on parametrial arterial flow velocity in pregnancy, R614

17β-Estradiol

potentiation of endothelium-dependent vasorelaxation in coronary artery,

Estrogens

cardioprotective potential in premenopausal women, H377

effects on brain damage and mortality from hyponatremic encephalopathy, R1143

effects on calcium channels in myometrial cells, C64

effects on gastric emptying and gastrointestinal transit, G171

effects on ischemia- and reperfusioninduced ventricular arrhythmias, H2569

effects on liver mitchondria: role in acute fatty liver of pregnancy, G107 estradiol effects on gastric emptying and

gastrointestinal transit, G171 role in sexually dimorphic antidiuretic action of vasopressin, R951

Estrous cycle

and secretogranin II release from adenohyophysial gonadotrope cells, E145

Ethanol

effects on airway ciliary motility, role of nitric oxide, L596

effects on endotoxin-induced tumor necrosis factor and nitric oxide in lung, L991

gastric damage from, protective effect of raphe pallidus kainic acid, role of medullary thyrotropin-releasing hormone, G548

Ethanol drinking

effects on brain thirst mechanisms, R1526

N-Ethylmaleimide

inhibition of caveolae-mediated endothelial transport, H48

N-Ethylmaleimide-sensitive fusion protein

in inner medullary collecting duct and bladder, C792

N-Ethylmaleimide-sensitive fusion protein attachment proteins

in inner medullary collecting duct and bladder, C792

**Excitation-contraction coupling** 

and atherosclerotic changes in venous contractile function and ion channels. H2522

cardiomyocyte sarcoplasmic reticulum Ca2+ load, effects on fractional SR calcium release, C1313

cardiomyocyte sarcoplasmic reticulum Ca2+ load/gain relationship, H916

in cardiomyocytes, role of Ca2+ release from sarcoplasmic reticulum, effects of age on, H1195

energy suppression by Ca2+-free, then high-Ca2+, perfusion, heart failure from, H1061

intracellular acidosis effects on skeletal muscle [Ca2+]i-force relations, C55

mechanisms in rat tail artery, H74 in skeletal muscle, Na+ and K+ effects on contractility, C1528

**Excited behavior** 

and loss of adenosine-induced negative inotropism, role of protein kinase C, H1037

**Excretory transport systems** 

P-glycoprotein-mediated proximal tubular secretion of cyclosporin analog, F46

Exercise

activation of cardiac heat-shock transcription factor, C1387

ammonia and amino acid metabolism in canine gastrocnemius, R759

baroreflex changes from, role of arterial compliance, H411

dynamic, recovery from, relations between cardiovascular and metabolic systems and exercise cost, H2311

effects of immobilization on skeletal muscle glucose transport and insulin receptors, E980

effects on cardiopulmonary baroreceptor modulation of carotid baroreflex control of heart rate, H1567

effects on carotid-cardiac baroreflex latency, H1208

effects on glucose homeostasis and renin response after liver or kidney transplant, E636

effects on insulin-stimulated glucose uptake in low insulin responders, E1046

effects on lipoprotein lipase gene expression in skeletal muscle and adipose tissue, E229

effects on muscle amino acid and protein kinetics, E514

effects on muscle carnitine palmitoyltransferase II mRNA, E277

effects on muscle pyruvate dehydrogenase activity and glucose-fatty acid cycle after acetate infusion, E1007

effects on protein metabolism in elderly, glucose production from, role of sympa-

thetic hepatic nerve activity, R72 HSP70 induction by, and effect of body temperature, R92

intolerance, in hyperthyroidism, role of noncardiovascular factors, H330

and metabolic adaptations to reduced food intake in desert survival, R1101

muscle glycogenolysis during, role of epinephrine and of phosphorylase transformation, E127

and physiology of heat regulation (editorial opinion), R838

plus β-adrenergic blockade, effects on amino acid metabolism, E910

plus growth hormone, effects on muscle in older men, E268

single-leg knee extension, determinants of maximal oxygen uptake by exercising muscle, H1453

and skeletal muscle contracture, C317 skeletal muscle ischemia from, role of muscle metaboreflex in restoring blood flow, H980

Exercise pressor reflex

modulation by dorsal horn serotonin<sub>1A</sub> receptors, H1577

Exercise training

adaptive responses of glucose catabolism proteins in skeletal and cardiac muscle, R130

attenuation of arterial baroreflex function, mechanisms involved, H662

effect on collateral and microvascular adaptation to arterial insufficiency, H125

effects on collateral blood flow in peripheral arterial insufficiency, H1174

effects on hepatic glucose metabolism, role of gluconeogenesis vs. glycogenolysis, E375

effects on insulin sensitivity and body fat distribution, E484

effects on protein synthesis in muscle and liver, E328

effects on reduced myofibrillar protein synthesis in elderly, E422

effects on vascular reactivity in hypothyroidism, role of endothelium and smooth muscle cells, H1428

electrical skeletal muscle stimulator with adjustable duty cycles, use in rabbit and rat, H1373

Exteroceptive stimulation amygdalar responses to, R666 Extracellular matrix

endothelial cell culture on gelatin vs. Matrigel, effects on morphology and gene expression, H1613

of fetal lung cells, effects on distal lung epithelial ion transport, L762 growth factors binding (review) L869

growth factors binding (review), L869 interaction with bone cells, and signaling pathways in osteoblasts, role of type I collagen, C1090

interaction with bronchial epithelial cells

effects of cigarette smoke, L723 virus effects on, L214

of type II pulmonary epithelial cells role of adrenal hormone in synthesis, L885

turnover kinetics, L336

Extracellular signal-regulated kinase kinase

activation by pancreatic acinar cholecystokinin, G1060

Extracellular space

relation to tissue metabolic rate in mouse, rat, rabbit, sheep, and cattle liver and kidney, R641

**Extracorporeal circulation** 

contact-mediated inflammatory response from, effects of kallikrein inhibitors, H1352

Extracorporeal membane oxygenation

mathematical teaching model, S32

Eye

cornea, endothelial cells, cation channel activation during wound healing, C1179

corneal epithelium, outgrowth modulation by opioid growth factor, R942

Graves' ophthalmopathy, role of leukoregulan-induced hyaluronan synthesis, C382

nonpigmented ciliary epithelial cells regulation of Cl<sup>-</sup> transport into aqueous humor, C572

regulatory volume decrease mechanisms, C721

retinal pigment epithelium

apical membrane inwardly rectifying K+ conductance, C1164

cell volume regulation mechanisms, C89

retinal vasculature, peroxide-induced vasoconstriction and role of thromboxane, H628

trabecular meshwork cells, sodium-potassium-chloride cotransport, volume regulation, and permeability, C1067

F

fa gene, see Rat obesity fatty (fa) gene Facial (chorda tympani) nerve

role of afferents in reflex submandibular salivation and vasodilation, R438

Fasting

see also Food intake, after fasting

effects on blood volume and plasma protein restoration after hemorrhage, R715

effects on duodenal chyme transport patterns, G700

effects on insulin secretion response to glucose, E21

effects on insulin-like growth factor system in small bowel, G631

Fasting-refeeding cycling

effects on linoleate and  $\alpha$ -linolenate tissue stores, R498

body

see also Adipose tissue; Obesity

metabolism, effects of nocturnal rise in cortisol, E595

oxidation, caffeine effects on, in elderly, E1192

waist-to-hip ratio, and enhanced insulin sensitivity in master athletes, E484

in diet, role in obesity, vs. dietary protein level or genetics, R658

dietary, dose-response relation to body

fat deposition, E546 dietary, effects on jejunal lactase gene expression, G1066

Fatigue

and Na<sup>+</sup> and K<sup>+</sup> effects on contractility, C1528

**Fat-storing cells** 

platelet-derived growth factor-induced mitogenesis, effects of lipoxygenase inhibitors on, C604

Fatty acids

albumin-bound, metabolic fate in proximal tubule cells, F1177

effects of fish oil supplement on age-related immune dysfunction, R208 essential, deficiency, effects on renal sensory receptors, R164

free

kinetics and metabolism, interleukin-6 effects in humans, E813 plasma levels in fish, effects of cat-

echolamines and insulin, R1163 stimulation of steroidogenesis in adrenocortical cells, R1484

intracellular metabolism, and pyruvate dehydrogenase response to changes in plasma glucose and insulin. E752

long-chain, uptake by cardiomyocytes, roles of albumin, facilitation, and endothelial cell synergism, H1659

long-chain vs. medium-chain, as substrate for myocardial postischemic reperfusion, H2505

n-3

for parenteral nutrition, and arachidonic vs. eicosapentaenoic acid effects in pulmonary hypertension, H2252

polyunsaturated, relation to eicosanoid synthesis in cardiomyocytes, H308

n-3 and n-6 polyunsaturates, effects of fasting-refeeding cycling on tissue stores, R498

nonesterified

effects of low-protein diet during pregnancy on insulin actions, E722

plasma levels, effects of  $\beta_3$ -adrenergic agonist BRL-35135 in obese mice, E678

and reduced venous distensibility and venous volume in obesity and hypertension, R562

oxidation, contractile activity effects on carnitine palmitoyltransferase II mRNA, E277

oxidation in mitochondria, estrogen and progesterone effects on, G107 peroxidation, role in smoking-induced

platelet hyperactivity, H678 polyunsaturated unesterified, uptake and interconversion by GI tract,

and interconversion by GI tract, G732 straight-chain, lingual trigeminal nerve

sensitivity, factors affecting, R58 in structured triglycerides, effects of

type and position on absorption and lymphatic transport, G568 synthesis, effects of GLUT-4 overexpres-

sion, E956 unesterified, injury-associated accumulation in proximal tubule cells, F110

Fatty liver, acute

of pregnancy, role of sex hormone effects on liver mitochondria, G107

Fatty-acid synthase

gene transcription in fetal lung, glucocorticoid stimulation and effects of retinoic acid on, L683

Feedback mechanisms

in biochemical principles, S40 in cortical collecting duct sodium channels, response to cAMP, F480

and feedforward mechanisms, in control of coronary blood flow, model for, H895

and gonadotropin-releasing hormone levels in pituitary after orchidectomy in rat, E685

### Feedback mechanisms (continued)

nitric oxide inhibition of endothelial NO synthase, H2216

role in pulsatile insulin secretion, modeling analysis, C780

and stretch-induced ventricular arrhythmias, role of Ca<sup>2+</sup> and Na<sup>+</sup> influx, H1803

tubuloglomerular

angiotensin II dependence in hypertensive ren-2 transgenic rats, F821 and cGMP-dependent dilator effects

on preglomerular vasculature, F338 effects of K channel blockade with barium, F960

instantaneous and steady-state measures of open-feedback-loop gains, F163

#### Feeding response

see also Food intake

effects of parabrachial nucleus lesions on, R676

#### Females, see Gender differences Ferritin

in caveolae-mediated endothelial tissue uptake, inhibition by N-ethylmaleimide, H48

hemoglobin-induced induction in pulmonary endothelial cells, L321

#### Fertilization

acrosome reaction, and characteristics of calcium channels in boar sperm plasma membrane, C1284

#### Fetus

see also Maturation

adenovirus-mediated gene transfer to lung ex vivo, L839

alternative-splicing expression of pulmonary tenascin, role of transforming growth factor-β, L173

angiotensin II  ${\rm AT}_2$  receptors, mRNA distribution in developing kidney and adrenal gland, F922

angiotensin II pressor effects and clearance rate, vs. maternal rate, E237

aortic hemodynamics, vs. newborn, H558

bile acid transport across trophoblast to maternal blood, G685

biological activity of ACTH precursors in adrenal cells, E623

constitutive endothelial NO synthase gene expression, regulation during lung development, L589

cortisol infusion, effects on postnatal maturation of renal cortical Na<sup>+</sup>/H<sup>+</sup> exchanger, F710

developmental changes in epicardial action potential configuration and transient outward current, H2513

distal lung epithelium, bioelectric properties and chloride secretion, L270

effects of carotid occlusion in, and immaturity of vagal afferent buffering systems, R343

endocrine levels and urine production after hypoxemia from reduced uterine blood flow vs. maternal N<sub>2</sub> inhalation, F868

endothelium-derived NO effects on pulmonary arteries vs. pulmonary veins. H1586 epiphyses, perichondrial localization of endothelin ET-1/ET<sub>A</sub> receptor system, C496

expression of vascular endothelial growth factor and its receptors in meso- and metanephros, F240

free vs. sulfoconjugated catecholamines, effects of corticosteroids, E28

gene transcription of pulmonary fattyacid synthase, glucocorticoid stimulation and effects of retinoic acid on, L683

hepatic glutamine-glutamate exchange with placenta, E705

hypothalamic corticotropin-releasing hormone and vasopressin, effects of stress and glucocorticoids, E1096

hypoxemia, effects on oxygen, glucose, and lactate uptake, R303

integrins as collagen-binding receptors, in lung fibroblasts vs. epithelial cells, L136

lung cells

alveolar type II, inflammatory mediator-induced nitrate and nitrite production in, L501

effect of O<sub>2</sub> dose on surfactant protein mRNA expression and phospholipid production, L818

extracellular matrix from, effects on distal lung epithelial ion transport, L762

strain-induced increase, role of phospholipases C and D and protein kinase, L729

lung development

dexamethasone effects on tropoelastin expression, L491

ontogeny of procollagen type I synthesis sites during, in humans, L309

surfactant protein B gene expression, roles of transcription and mRNA stability, L481

lung secretion and clearance of ACTH, E845

nutrition, lysine transport by placental microvillous membrane vs. basal membrane, C755

parametrial arterial flow velocity and maturation of distal vs. proximal uterine horn segments, R614

pituitary growth hormone expression, regulation by thyroid and glucocorticoid hormones, E262

protein metabolism, cortisol effects on, E1114

pulmonary hypertension in

altered reactivity to endothelium-dependent vasodilators, H288 blockage site in NO vasodilation path-

way, H1483

thyroid hormone metabolites, appearance in maternal urine, E33

urine flow, effect of maternal 1-desamino-[D-Arg<sup>8</sup>]vasopressin-induced hyposmolality, R358

# Fever

endotoxin-induced

in pregnant, parturient, and lactating rats, R919

site of tumor necrosis factor-α antipyretic actions, R480 from polyriboinosinic-polyribocytidylic acid

effects of ramplike total body cooling, R1257

effects on shivering threshold and thermosensitivity, R1266

from tumor necrosis factor-α, effects of endotoxin tolerance on, R514

Fibrillation, see Arrhythmias, ventricular

# Fibrin, fibrinogen, and degradation products

effects on endothelium-derived relaxing factor production, C520

#### **Fibrinolysis**

insulin-induced release of plasminogen activator from platelets, H117

# Fibroblast growth factor

hacia

and its receptor, gene expression in lung after 85% O<sub>2</sub>, L455

effects on indomethacin-delayed gastric ulcer healing, G276

role in hypoxia-stimulated capillary network formation in lung microvessel endothelial cells, L789

cytokine-binding proteins in lung (review), L869

Fibroblasts

in fetal lung, integrins as collagen-binding receptors, L136

neuropeptide effects on proliferation and chemotaxis, L278

of skin, hormone-induced cAMP production, bile acid effects on, G908

Fibronectin

bronchial epithelial cell production, effects of insulin, L230

and bronchial epithelial cell-matrix interactions after viral infection, L214 production by endothelial cells grown on gelatin vs. Matrigel, H1613

Fish

air-breathing vs. water-breathing, respiratory organ responses to acetylcholine and nitroprusside, R816

effects of catecholamines and insulin on plasma glucose and free fatty acids, R1163

gill filaments, blood flow control by serotonin, sites of vasoconstriction, R1224

gills, arterioarterial and arteriovenous branchial vasculature, response to hypoxia, R771

marine

chloride-secreting cells, low-conductance, cAMP-activated anion channels, R963

phosphocreatine-creatine kinase circuit, role in ion transport and energy metabolism, R1003

muscle energy metabolism during hypoxia and recovery, R1178

tubular transport of phosphates and calcium, somatolactin, growth hormone, and prolactin effects on, R577

#### Fish oils

dietary supplement, effects on age-related immune dysfunction, R208

Fluid and electrolyte balance

in fowl, colonic motility and urine reflux, effects of urine flow rate and osmolality, R690 Fluid therapy

with and without catecholamines, hemodynamic effects in septic shock, H692

#### Fluids

see also Water

atrial, transmural transport, role in atrial natriuretic peptide secretion, R1129

extracellular fluid volume, baroreflex responses to volume expansion in newborn and age-related changes, H1343

extracellular, effects of thromboxane A<sub>2</sub> receptor activation, R366

intestinal, role in blood volume and plasma protein restoration after hemorrhage, R715

transplacental transfer, effects of increasing maternal hyposmolality, R358

transport in proximal tubule, adenosine 3',5'-cyclic monophosphate effects on, F204

urinary excretion, atrial natriuretic peptide effects on, changes in pregnancy, F416

 $\begin{array}{c} urinary\ excretion,\ effects\ of\ vasopressin\\ V_1\ receptor\ stimulation,\ R796 \end{array}$ 

Food

in intestine, role in blood volume and plasma protein restoration after hemorrhage, R715

#### Food intake

see also Diet; Malnutrition; Nutrients; Satiety

after fasting, effects on insulin secretion response to glucose, E21

caloric restriction, effects on experimental hypertension and cardiac β-myosin heavy chain gene expression, R33

c-fos expression from, gastrointestinal cues stimulating, R223

conditioned taste aversion, to amino acid-imbalanced diet in rat, role of serotonin<sub>3</sub> receptor, R1203

decreased, in desert animals, resulting metabolic adaptations, R1101

effects of human satietin in rats, R1 effects of interleukin-1 $\beta$ , tumor necrosis factor- $\alpha$ , and both, E551

effects on aortic hemodynamics in perinatal period, H558

effects on colon motility in unrestrained ambulatory dogs, G650

effects on proximal colonic tone, G95 glucocorticoid and insulin reciprocal effects, R142

of highly nutritive diet vs. sucrose, effects of cholecystokinin vs. amino acids on, R520

and host responses to cytokines or endotoxin, E255

β<sub>2</sub>-microglobulin effects, R1513 metabolic control, 2,5-anhydro-D-mannitol effects on fuel oxidation, R299

naloxone effects on, role of food restriction and sweet taste, R248 neuropeptide Y effects

during short and long photoperiods in sparrows, R1418

on consummatory phase, R423 postprandial natriuresis, and peptide YY effects on renal function, F754 postprandial thermogenesis, role of skeletal muscle vs. splanchnic tissue in men vs. women, E433

postprandial vs. postabsorptive state, effects on protein synthesis in muscle and liver, E328

relation to diet composition and metabolism in parabiotic partner of obese rat, R874

serotonin receptor subtypes involved in regulation, R14

suppression by cholecystokinin octapeptide, near-celiac vs. intravenous infusion, R150

Food protein-induced gastrointestinal allergy

effects on colon longitudinal muscle contractility, G764

Force development

in skeletal muscle, effects of myosin phosphorylation on, C596

Forearm vascular resistance

in cirrhotics, response to methacholine chloride, nitroprusside, and phenylephrine, G459

fos

and lipoxygenase inhibitor effects on platelet-derived growth factor-induced mitogenesis, C604

Fos (protooncogene product)

pancreatic intranuclear immunoreactivity after veratridine or serotonin, G339

Fractal analysis

for regional blood flow determinations, H112

Free radicals

see also Oxidative stress; Peroxides; Superoxide anion; Reactive oxygen species

generation in bronchial epithelial cells, effects of cytokines on, L71

lung injury from, and inflammatory mediator-induced NO production by type II cells, L501

peroxynitrite chemistry (review), L699

Fructose analogues

2,5-anhydro-D-mannitol

feeding response to, effects of parabrachial nucleus lesions on, R676 metabolic effects, on respiratory quotient and fuel oxidation, R299

Fulbright Scholar program (letter), S82

Furan fatty acid

effects on pituitary uptake of thyroid hormones and release of thyroidstimulating hormone, E974

Furin

role in proparathyroid hormone-related peptide processing, E832

G

G protein-coupled receptors

angiotensin II type 2, peptide fragment effects on neuronal delayed rectifier K<sup>+</sup> current, C278

neuropeptide Y/NPY Y<sub>1</sub>, regulation in rat brain cortex, R192

somatostatin, in hamster glucagonoma cells, E40

G protein-coupled signaling systems regulation of Ca<sub>i</sub> and Na/H exchanger NHE-1, C101

G protein-linked receptors

in airway smooth muscle cells (review), L1

G proteins

and acinar-cell somatostatin receptor binding after enterectomy, E343

coupling to calcium-activated K channels, effects on tracheal smooth muscle, L221

and endocrine abnormalities of obese Zucker rat, E693

G<sub>i</sub>, and modulation of neuronal delayed rectifier K<sup>+</sup> current by angiotensin II type 2 receptor fragment, C278

 $G_o$  and  $G_i$ ,  $\alpha$ -subunits in rat brain cortex, R192

 $G\alpha_q$ ,  $G\alpha_{13}$ , effects on  $Ca_i$  and Na/H exchanger NHE-1, C101

Gα<sub>s</sub>, Gα<sub>i-2</sub>, Gα<sub>i-3</sub>, role in regulation of renal cortical Na-HCO<sub>3</sub> cotransporter, F461

G<sub>s</sub>, role in bile acid suppression of hepatocellular cAMP synthesis, G300

G<sub>s</sub>α/Gα<sub>i·2</sub> axis, role in stem cell progression to primitive endoderm, C1460 and α<sub>2</sub>-adrenergic electrophysiological

effects in Purkinje fibers, H2024 pertussis toxin-sensitive, effects on phenylalanine-induced cholecystokinin

nylalanine-induced cholecystokinin secretion, G90 and prostaglandin E<sub>2</sub> receptors in co-

lonic crypt cells, G270

in renal epithelial cell apical membrane, role in natriferic action of aldosterone, C557

role in adenosine protection against calcium paradox injury, C838

role in agonist-induced force enhancement in vascular smooth muscle cells, C1202

role in IL-1β suppression of cardiomyocyte L-type calcium currents, C339

role in parathyroid hormone-induced rise in [Ca<sup>2+</sup>], in proximal tubule cells, F330

role in somatostatin effects on thyroidstimulating hormone-secreting cells, E558

uncoupling from astroglial oxytocin receptors, role in downregulation, C413

GABA, see γ-Aminobutyric acid entries Galactosamine

liver injury from, role of endothelin-1, G997

Galactose-intoxication diabetes blood-nerve barrier permeability from,

role of hyperglycemia and mast cell degranulation, H740 Galactosylated proteins

recognition by liver, G849

Gallbladder

bradykinin-stimulated, role of spinal tachykinin receptors in resultant cardiovascular reflexes, H526

Gap junction channels

of connexin 45, properties in hepatoma SKHep1 cell line, C356

Gap junctions

cardiac, single hemiplaques revealed by atomic force microscopy, C968 Gap junctions (continued)

connexin proteins, distribution in arteriolar smooth muscle and endothelium, H729

hepatocyte, effects of common bile duct ligation on, C1186

and metabolic coupling in colon musculature, C1492

tracheal distribution, changes with postnatal development, L576

Gastric inhibitory peptide

effects on amino acid-induced insulin secretion, E949

# Gastric, see Stomach

Gastrin

gastrin-cholecystokinin-B receptors on J.RT3-T3.5 Jurkat cells, G522

need for cAMP in eliciting parietal cell aminopyrine accumulation, G82

rat-human chimeric transgene, antral G cell-specific expression, G1025 role in bombesin-stimulated gastric acid

secretion, G54 role in uremia-induced gastric mucosal

hypertrophy, G586 as stimulator of pancreatic cancer, R135

#### Gastroesophageal, see Esophagogastric

**Gastrointestinal motility** 

contractile patterns and relation to propulsion, G530

in unrestrained ambulatory dogs, 24hour study, G650

duodenal pH effects on interdigestive migrating myoelectric complex, G146

sex hormone effects on, G171

**Gastrointestinal** tract

blood flow and oxygenation in acute plus chronic hypoxemia, H974

distribution of prolactin and growth hormone receptor transcripts and isoforms, G431

food and water in, role in blood volume and plasma protein restoration after hemorrhage, R715

inflammatory diseases

and transepithelial neutrophil migration, polarity of early adhesion,

insulin-like growth factor in bile, R266 origin of cues activating medullary subnuclei after eating, R223

Gender differences

in antidiuretic action of vasopressin, role of estrogen, R951

in blood flow distribution, peripheral and visceral, R66

effect on capillary pressure physiology in healthy adult volunteers, H147

effects on brain damage and mortality from hyponatremic encephalopathy, R1143

effects on brown fat and skeletal muscle responses to cold, R931

and gonadal hormone cardioprotective potential in premenopausal women,

growth hormone profiles in, neonatal phenobarbital-induced changes and effects on monooxygenase regulation, E439

and growth response to clenbuterol,

in NPY/NPY Y1 receptor/G protein complex in rat brain cortex, R192

in regulation of cardiovascular system, role of gonadal hormones, R40

role of skeletal muscle vs. splanchnic tissue in postprandial thermogenesis and oxygen consumption, E433

Gene transfer

adenovirus- and plasmid-mediated, to salivary submandibular gland, G1074

adenovirus-mediated

to bronchial submucosal glands, L657 to human fetal lung ex vivo, L839

lung-specific, by tracheal insufflation of plasmid DNA, L1052

#### Genes

see also Protooncogenes and specific gene

alternative splicing

in expression of tenascin in fetal lung, role of transforming growth factor-β, L173

of β3-adrenergic receptor mRNA, regulation in mouse adipocytes,

ROMK isoforms of inwardly rectifying and ATP-sensitive K+ channels, distribution in nephron, F1132

and transcriptional initiation, variant NH2-terminal domains in chicken AE1 anion exchangers, F503

cloned dietary phosphate-regulated rabbit renal Na-Pi cotransporter, F626

human CC10, sequence analysis, chromosomal locus, expression in airway epithelium, and link to airway disease, L565

immediate early, hindlimb perfusion effects on expression in skeletal muscle, E866

mesangial cell activated phenotype, CArG box motifs regulating smooth muscle α-actin promoter, F760

promoters for lipoprotein lipase, DNA motifs and tissue-specific expression, E213

rat gastrin promoter-human gastrin reporter chimeric transgene, antral G cell-specific expression, G1025

renal Na-Pi cotransporter in mouse, cloning, genetic mapping, and expression analysis, F1038

sequencing, myosin light chain 1, fasttwitch isoform from bovine muscle,

skeletal a-actin promoter elements responding to stretch overload, C918 surfactant protein B

in mouse, nucleotide sequence and comparison with human gene, L381 promoter characteristics, L674

transcriptional control regions in smooth muscle α-actin promoter.

ultraviolet B-inducible keratinocyte genes, identification and mechanisms, C846

role in obesity, vs. dietary fat and protein levels, R658

#### Genistein

effects on Ca2+ mobilization in carotid media, C1425

effects on cystic fibrosis transmembrane conductance regulator, C886

see also Embryo: Fetus: Placenta

acute fatty liver, estrogen and progesterone effects on liver mitochondria,

atrial stretch-atrial natriuretic factor relationship, R1411

effects of sleep and myometrial activity on systemic and uteroplacental hemodynamics, H1734

effects on neurogenic constriction and dilation of uterine artery, H1694

effects on renal responses to atrial natriuretic factor, F416

effects on volume-sensitive cardiopulmonary receptor reflexes, R736

energy requirement calculations, importance of body density and body water in body fat estimates, E153

erythropoietin metabolism, increased synthesis vs. decreased clearance,

febrile response to E. coli endotoxin in rat, R919

fetal thyroid hormone metabolites in maternal urine, E33

maternal low-protein diet, effects on insulin actions, E722

myometrial quiescence and excitability, role of estrogen effects on myometrial Ca channels, C64

parametrial arterial flow velocity, relation to maturation of distal vs. proximal uterine horn segments, R614

# Giant migrating contractions

relation to propulsion, G530 in unrestrained ambulatory dogs, 24hour study, G650

### Gills of fish

arterioarterial and arteriovenous branchial vasculature, response to hypoxia, R771

blood flow control in filaments by serotonin, sites of vasoconstriction, R1224 of euryhaline fish, ion transport in, role of phosphocreatine-creatine kinase circuit, R1003

## Glands

submucosal, in distal airways, relation to transepithelial Cl- secretion, L526

sodium-potassium-chloride cotransport and volume regulation in trabecular meshwork cells, C1067

# Glial cells

C6, effects on Na-K-Cl cotransport in cerebral vascular endothelial cells, C747

Glomerular filtration rate see under Kidney

Glomeruli, see under Kidney Glomerulosa cells, see Adrenal gland, glomerulosa cells

#### Glomus cells

of carotid bodies, [Ca2+]; response to hypoxia, developmental changes, L801 Glucagon

effects on hepatocytes from protein-deficient suckling rats, E368

hepatic gluconeogenic response, cold acclimation effects on, E1184

hepatic response to, effects of hepatic denervation, E194

hepatocellular cAMP synthesis from, mechanism of bile acid suppression, G300

and phosphorylation of hepatic 6-phosphofructo-2-kinase/fructose-2,6bisphosphatase, inhibition by tobutamide, E391

plasma levels, interleukin-6 effects in humans, E813

regulation of albumin gene expression in hepatocytes, E6

role in glucose homeostasis during malnutrition, E873

role in low-Po<sub>2</sub> stimulation of glucose production, E1174

role in sepsis-induced increased hepatic gluconeogenesis, E92

secretion, somatostatin effects on, in hamster glucagonoma cells, E40

Glucagon-like peptide I amide effects on amino acid-induced insulin secretion, E949

Glucagon-like peptide-I-(7—36) vs. glucose-dependent insulinotropic

vs. glucose-dependent insulinotropic polypeptide, comparative insulinotropic effects, E645

Glucoamylase

ontogenic intestinal changes, normal vs. glucocorticoid-accelerated, 5-bromo-2'-deoxyuridine effects, G139

Glucocorticoid receptors

nuclear, binding to glucocorticoid response elements, C331

Glucocorticoid response elements binding to activated nuclear glucocorticoid receptors, C331

Glucocorticoids

effects on adipose tissue, reciprocity with insulin, R1209

effects on fetal hypothalamic corticotropin-releasing hormone and vasopressin, E1096

effects on growth, and cortisol effects on fetal leucine kinetics and protein metabolism, E1114

effects on hepatocytes from protein-deficient suckling rats, E368

effects on hypothalamic peptide-induced ACTH release, E85

effects on ontogeny of sodium/hydrogen exchangers NHE1 and NHE3 in renal cortex, F815

effects on pulmonary  $\beta_2$ -adrenoceptor transcription rate, L41

effects on transcription factor activation in mononuclear cells, C331

effects on tropoelastin expression during fetal lung development, L491

as long-term energy balance regulators, reciprocity with insulin, R142

muscle atrophy from, glutamine effects on, E730

precocious intestinal maturation from, normal or deviant pathway?, G139 prenatal infusion, effects on postnatal

renatal infusion, effects on postnate maturation of renal cortical Na<sup>+</sup>/H<sup>+</sup> exchanger, F710 role in bicarbonate absorption in loop of Henle, F234

role in fetal pituitary growth hormone expression, E262

stimulation of fatty-acid synthase gene transcription in fetal lung, effects of retinoic acid on, L683

upregulation of Na-K-ATPase α and β subunits in proximal tubule cell, F862

#### Glucokinase

role as glucosensor in β-cell mathematical model of glucose metabolism and insulin release, E775

Gluconeogenesis

defects in murine Hyp homologue of Xlinked hypophosphatemia, F357

from lactate, in fasting infants, E652 hepatic

during exercise, effects of endurance

training on, E375 effects of denervation on hepatic response to glucagon, E194

response to norepinephrine and glucagon, cold acclimation effects on, E1184

role of glucagon in sepsis, E92 in hepatocytes, mechanism of hypoxia-

induced inhibition, E965 and measuring glucose oxidation by respiratory calorimetry vs. isotopic tracers, E789

in response to hypoglycemia, insulin effects on, E521

#### Glucose

see also 2-Deoxy-D-glucose

blood-brain barrier permeability during starvation, E1161

cotransport with Na+, in cystic fibrosis jejunum, G505

deprivation, and B-cell non-response to glucose, protective effects of succinic acid monomethyl ester, E580

disposal, effects of plasma insulin levels, E1031

effectiveness, peripheral vs. hepatic, effects of insulin and glucose blood levels, E410

extracellular levels, effects of periodic highs on mesangial cell collagen production, F13

hepatocyte output, nitric oxide effects on, G183

homeostasis

during exercise, after liver or kidney transplant, E636

during malnutrition, roles of insulin vs. glucagon, E873

effects of denervation on hepatic response to glucagon, E194

role of hepatic-adrenal afferents, R50 in skeletal muscle, during insulin-induced hypoglycemia, E248

zymosan-induced changes in, role of tumor necrosis factor, E219 asulin effects on transport and extrace

insulin effects on transport and extracellular distribution, E712

insulin secretion after hyperglycemia, in vitro vs. in vivo, role of muscarinic activation, R475

and insulin secretion, dose-response relations in differing physiological states, E21 insulin-stimulated conversion to glycogen, in working vs. nonworking heart. E48

interconversion with lactate in fasting infants, E652

kinetics

in cytokine- and endotoxin-treated rats, effects of IL-1 receptor antagonist, E255

simulation model and estimated glucose utilization rate in diabetics, E766

kinetics and metabolism, interleukin-6 effects in humans, E813

metabolism

(1S,3R)-1-aminocyclopentane,1,3,dicarboxylic acid effects on, R1026 cerebral metabolic rate in active and hibernating squirrels, R445

chloroquine effects on, in muscle, E820

diet restriction-induced changes and effects of aging, E941

effects of GLUT-4 overexpression, E956

effects of local epinephrine infusion, E55

effects of low-protein diet during pregnancy on insulin actions, E722

hepatic, during exercise, effects of endurance training on, E375

and insulin release, in β-cell, mathematical model of glucokinase as glucosensor, E775

insulin-dependent, acidosis effects in chronic renal failure, E121 in macrophages, nitric oxide effects

on, C669
mechanisms of magnesium deficiency

effects, E925 in newborn enterocytes and effects on

glutamine metabolism, R334 in proximal tubule cell cultures, ef-

fects of glucose, lactate, and oxygen levels in medium, C1053 in sepsis, role of glucagon, E92

in vascular smooth muscle, vs. pyruvate, and energetics compartmentation, C628

in vascular smooth muscle, energy consequences of change from lactate production to glucose oxidation, H713

modulation of renal [Ca<sup>2+</sup>]<sub>i</sub>, role of endoplasmic reticulum Ca<sup>2+</sup>-ATPase, F671

oxidation in small intestine, effects of glutamine, G879

oxidation, measuring by respiratory calorimetry vs. isotopic tracers, E789

plasma levels

see also Hyperglycemia; Hypoglycemia

changes in, pyruvate dehydrogenase response to, effects of high-fat diet on, E752

effects of  $\beta_3$ -adrenergic agonist BRL-35135 in obese mice, E678

in fish, effects of catecholamines and insulin, R1163

production

autoregulated hepatic, effects of lactate infusion in traumatic stress, E630

#### Glucose (continued)

exercise-induced, role of sympathetic hepatic nerve activity, R72

low-PO<sub>2</sub>-stimulated, role of pancreatic hormones, E1174

skeletal muscle uptake after intracerebral N-methyl-D-aspartate, neural control, R492

stimulation of insulin release, bradykinin effects on, E1027

as substrate for myocardial postischemic reperfusion, H2505

threshold effects on insulinotropic activities of incretins, E645

#### transport

in guinea pig brown fat cells, effects of norepinephrine and insulin, R98

transport in enterocyte brush-border membrane vesicles, polyamine effects on, G416

transport in muscle

basal vs. insulin-stimulated, Ca<sup>2+</sup> effects on, R997

effects of immobilization on, E980 growth hormone effects on and

changes with age, E902 in skeletal muscle, effects of insulin and contractions, C30

insulin-stimulated, relation to skeletal muscle fiber type and obesity, E453 insulin-stimulated vs. contraction-

stimulated, maturation effects on, E1154

uptake

by astroglia, role of angiotensin II and pathway involved, E384

by muscle, insulin-mediated, inhibition by α-adrenergic vascular effect, E305

glucose-mediated, effects of plasma insulin level, E1089

insulin-stimulated, in sedentary vs. endurance-trained low insulin responders, E1046

in hypoxic fetus, placenta, and uterus, R303

utilization in hypothalamoneurohypophysial system after hypertonic saline, mannitol, or both, R651

#### p-Glucose

vs. nonglucidic nutrient secretagogues, effects on pancreatic B cell secretion, C611

Glucose oxidase

effects on tracheal epithelial cell membrane conductance and permeability, L284

Glucose tolerance

in older athletes vs. sedentary persons, E484

Glucose transporters

GLUT-1 and GLUT-4

and half-maximal saturating substrate concentration  $(K_{\rm m})$ , C30

hindlimb perfusion effects on gene expression in skeletal muscle, E866 in skeletal muscle, effect of immobili-

zation on expression, E980 in skeletal muscle, growth hormone effects on and changes with age,

GLUT-1, role in angiotensin II-stimulated glucose uptake by astroglia, E384 GLUT-1, role in pulsatile insulin secretion, modeling analysis, C780

GLUT-4

insulin-induced translocation to plasma membrane in skeletal muscle, E613

overexpression, effects on glucose metabolism and fatty acid synthesis, E956

in skeletal and cardiac muscle, adaptive response to exercise, R130 and simulation model for glucose kinet-

ics, E766

structure, multifunctionality, and water transport (review), C1077

Glucose-6-phosphatase

plus phosphofructokinase, role in  $\beta$ -cell glucose-sensing, simulation analysis, E775

Glucose-6-phosphate dehydrogenase in bronchial epithelial cells, effects of cytokines on, L71

Glucose-dependent insulinotropic polypeptide

natural vs. synthetic, vs. glucagon-like peptide-I-(7—36), E645

Glucose-fatty acid cycle

in skeletal muscle, effects of acetate infusion and exercise, E1007

**β-Glucuronidase** 

osteoclastic, effects of metabolic vs. respiratory acidosis, C80

Glutamate

extracellular, effects on intracellular glutaminase activity in proximal tubule-like cells, C1418

and glutamine, exchange between placenta and fetal liver, E705

transport in heart sarcolemmal vesicles, H194

Glutamate receptors

metabotropic, metabolic, hormonal, and hemodynamic effects, R1026

L-Glutamic acid dimethyl ester

vs. D-glucose, pancreatic B cell secretory responses, C611

Glutaminase

intracellular, effects of extracellular glutamate in proximal tubule-like cells, C1418

Glutamine

effects on glucose oxidation in small intestine, G879

effects on myosin heavy chain synthesis and muscle atrophy from glucocorticoids, E730

and glutamate, exchange between placenta and fetal liver, E705

metabolism in newborn enterocytes, R334

Glutathione

effects of oxidative stress on, in coronary venular endothelial cells, H1651

effects on hyperglycemia-induced hemodynamic changes, E1167

pancreatic decrease, role in pancreatitis pathophysiology, G592 regulation in alveolar type II cells, L21

Glutathione cycle

role in modulating oxidant-inhibited Ca<sup>2+</sup> signaling, H278

Glyceraldehyde-3-phosphate dehydrogenase

hepatocellular, nitric oxide effects on, G183 in macrophages, nitric oxide effects on, C669

Glycerol

metabolism in marsupial skeletal muscle, vasoconstrictor effects on, R1217

Glycerophosphocholine

osmotic regulation, F983

synthesis in renal cells, osmotic regulation, C402

Glycine

effects on injury-associated fatty acid accumulation in proximal tubule cells, F110

Glycoconjugates

recognition by Moluccella laevis lectin, use as marker in cell differentiation studies, G553

Glycogen

depletion before myocardial ischemia, role in reducing injury, H935

hepatic metabolism, role of glucagon in sepsis, E92

insulin-stimulated synthesis, in working vs. nonworking heart, E48 metabolism during ischemic precondi-

metabolism during ischemic preconditioning, H364

synthesis in skeletal muscle, effects of peroxyvanadium compounds, E60

Glycogen phosphorylase

b to a transformation, role in muscle glycogenolysis during exercise, E127

Glycogen storage diseases

mechanism of skeletal muscle contracture, C317

Glycogen synthase

activity in muscle, effects of plasma insulin levels, E1031

Glycogenolysis

in exercising muscle, regulatory mechanisms, role of epinephrine and of phosphorylase transformation, E127

hepatic, during exercise, effects of endurance training on, E375

Glycolysis

in β-cell, mathematical model of glucokinase as glucosensor, E775

Glycolytic metabolism

vs. oxidative, and compartmentation, in vascular smooth muscle, C628

P-Glycoprotein

and heat-shock-stimulated proximal tubular daunomycin secretion, F135 role in proximal tubular secretion of cyclosporin analog, F46

Glycosaminoglycans

leukoregulin effects on, in orbital vs. dermal fibroblasts, C382

Glycosylation

and effects of long-term diet restriction on glucose metabolism and changes with aging, E941

of serum proteins, role in hyperglycemic glomerular dysfunction and proteinuria, F913

Goblet cells

pancreatic, degranulation, neurohumoral control, G24

potassium conductance activation by Ca<sup>2+</sup> vs. cAMP, C1503

Golgi apparatus

role in regulation of [Ca2+], C1133

Gonadal steroid hormones

role in cardiovascular regulation, R40

Gonadotrope cells

rat, E685

adenohyophysial, secretogranin II release from, E145

Gonadotropin-releasing hormone pituitary levels after orchidectomy in

and secretogranin II release from adenohyophysial gonadotrope cells, E145

gp300 sulfated glycoprotein

increased acinar expression and altered acinar morphology in CFTR(-/-) mice, G717

Granulocyte-macrophage colonystimulating factor

cytokine-binding proteins in lung (review), L869

effects on neutrophil-glomerular endothelial cell interactions, F1

Granulocytes

gastric mucosal infiltration, after chronic aspirin doses, G134 rolling in mesenteric postcapillary venules, identification in vivo, H909

Graves' disease

ophthalmopathy in, role of leukoregulan-induced hyaluronan synthesis, C382

**Gravitational force** 

and myopathy in kyphoscoliotic mouse, C513

zero gravity effects on contractile protein fast and slow isoform mRNAs, C466

Gravity

effects on gastric emptying of nonnutrient liquid, G868 of oil and aqueous meal components, in pancreatic insufficiency, G925

Growth see also Maturation

of cardiomyocytes, effects of long-term electrically stimulated contraction, H2495

fetal, cortisol effects on fetal leucine kinetics and protein metabolism, E1114

G proteins induce primitive endoderm, C1460

hepatic amino acid transport in proteindeficient suckling rats, E368

pancreatic, somatostatin actions in acinar cells after enterectomy, E343 skeietal muscle, effects of BRL-47672

(morpholine compound) on, E159 of vascular smooth muscle cells, role of angiotensin II-induced α<sub>1</sub>-adrenergic receptors, H1006

Growth factors

see also specific factors in regulation of sodium/hydrogen exchanger isoforms, C283

Growth hormone effects on skeletal muscle glucose transport and changes with age, E902

effects on transepithelial  $P_i$  transport in flounder proximal tubule, R577

expression in fetal pituitary, regulation by thyroid and glucocorticoid hormones, E262

levels in sleep, dehydroepiandrosterone effects on in humans, E107

lifelong overexposure to, effects on growth hormone binding and target organs, E745 plus resistance exercise, effects on muscle in older men, E268

secretion

age- and sex-specific patterns, neonatal phenobarbital-induced changes and effects on monooxygenases, E439

growth hormone-releasing factorstimulated, role of  $Ca^{2+}$  influx, E204

serum levels, secretagogue-induced changes, effects of cold exposure on, E758

**Growth hormone receptor** 

GHRd3, distribution in gastrointestinal cell lines, G431

transcripts and isoforms in gastrointestinal cell lines, G431

Growth hormone-binding protein in transgenic mice expressing bovine

growth hormone gene, E745

Growth hormone-insulin-like growth
factor axis

persistent changes after trauma, R970 Growth hormone-releasing factor effects on somatotroph Ca<sup>2+</sup> influx,

E204 GTP-binding proteins, see G proteins Guanethidine

sympathectomy from, and antihypertensive effect of vasopressin withdrawal, H1

β-Guanidinopropionic acid

energetic effects in carotid artery smooth muscle with glucose vs. pyruvate as substrate, C628

Guanine nucleotide-binding proteins, see G proteins

Guanine nucleotides

effects on acinar-cell somatostatin receptor binding after enterectomy, E343

Guanosine 3',5'-cyclic monophosphate

see also Cyclic nucleotides; Protein kinases, cGMP-dependent

activation of Cl<sup>-</sup> channels in proximal tubule epithelial cells, F323

airway smooth muscle relaxation from, role of sarcoplasmic reticulum Ca<sup>2+</sup> ATPase, L407

atrial natriuretic peptide effects on, changes in pregnancy, F416

in Caco-2 cells, effects of sodium nitroprusside or *E. coli* enterotoxin, G361

effects on airway cilia and electrolyte transport, L1021

effects on atrial natriuretic peptide secretion by atrial myocytes, E428

effects on delayed cardiomyocyte relaxation during hypoxic reoxygenation, H2396

effects on Na-K-Cl cotransport in cerebral vascular endothelial cells, C747 effects on phospholipids and PKC, role

in vasorelaxation, C376 formation in pancreatic acinar cells,

Ca<sup>2+</sup> effects on, G900 levels in fetal pulmonary arteries vs. pulmonary veins, H1586

levels in pulmonary artery smooth muscle, endotoxin effects on, L509

in NO vasodilation pathway, disruption in fetal pulmonary hypertension, H1483 non-role in anesthetic-induced airway smooth muscle relaxation, L166

pulmonary vasorelaxation from, dysfunction in endotoxin-induced injury, L1029

regulation in pinealocytes, role of phosphatases, E458

relation to myocardial  $O_2$  consumption and effects of thyroxine-induced hypertrophy, H686

role in β-adrenoceptor-induced pial vasodilation in newborn, H1071

role in angiotensin II-dependent, ANFmediated transport inhibition in proximal nephron, F730

role in ATP-induced contraction in resistance arteries, H1223

role in coronary artery desensitization to bradykinin relaxation, H865

role in hypoxia-induced pial vasodilation in newborn, H226

role in prostaglandin-induced pial artery vasodilation in newborn, H1436

role in renal preglomerular vascular autoregulation, F338

use of inhaled analogue for selective pulmonary vasodilation in pulmonary hypertension, H2056

Guanosine 5'-triphosphate

hydrolysis by renal epithelial cell apical membranes, aldosterone effects on, C557

role in modulation of skeletal muscle K<sup>+</sup> conductance, C490

Guanosine 5'-triphosphate-binding protein, see G proteins

Guanosinetriphosphatase and Na<sup>+</sup> transport in renal epithelial

cells, aldosterone effects on, C557

Guanylate cyclase

role in pulmonary hypoxic vasoconstriction, L546

Gurmarin

effects on chorda tympani nerve responses to sweetness in C57BL vs. BALB mice, R1019

Gustatory-salivary reflex

role of chorda tympani afferents, R438

Н

Hair cells

vestibuloauditory, mechanotransduction in: stereociliary bundle structure and function (review), C1

Halothane

effects on tracheal smooth muscle effects on voltage-activated Ca<sup>2+</sup> channels, L187 force and [Ca<sup>2+</sup>], L166

Head-down tilt

effects on circulatory system and muscle sympathetic nerve activity, R1289

Heart

see also Arrhythmias; Cardiac and Cardio- entries; Ischemia; Ischemia-reperfusion; Myocardium

adenosine-induced negative inotropism, in calm vs. hyperexcited rabbits, role of protein kinase C, H1037

β-adrenergic receptors, effects of portal vein stenosis on, G410

arterial pressure spectra during cardiopulmonary bypass, H2329

#### Heart (continued)

atrial repolarization, role of Ca<sup>2+</sup>-dependent Cl<sup>-</sup> current, H1992

atrial stretch, left, plus cardiac sympathetic stimulation in atrial natriuretic factor release, H1405

atrioventricular conduction, effects of aging on, H1441

atrioventricular node, retrograde facilitated conduction: effects of sequential pacing times, H384

#### atrium

atrial natriuretic peptide secretion, roles of stroke volume and extracellular fluid shift, R1129

right and left distension, atrial natriuretic factor response during pregnancy, R1411

baroreceptors

cardiac vs. arterial, magnitude of impairment in cardiac failure, R112

right atrial and ventricular, effects of loading and unloading on vasopressin, ACTH, and renin secretion, R1069

cardiomyopathy in dystrophic hamster, thyroxine effects on, R779

cardioprotection from gonadal steroid hormones, H377

compliance, left atrial and ventricular, in cardiac hypertrophy, H781 contractility

adrenomedullin actions in conscious sheep, H2574

cardiomyocyte sarcoplasmic reticulum Ca<sup>2+</sup> load/gain relationship, H916

effects of tumor necrosis factor binding proteins on TNF- $\alpha$  negative inotropic properties, H517

endotoxin-induced dysfunction, nonroles of NO and cardiac energy metabolism, H2460

and hemodynamics after severe burns, hypertonic saline-dextran effects, H856

regulation by endogenous endothelin, H1621

# contraction

effects on pressure-area and pressureflow relations of coronary vessel segments, model for, H2531

energy saved by quick release at peak contraction, cross-bridge model analysis, H2544

coronary vascular resistance, modulation, role of ATP-sensitive K channels and vasoactive neurotransmitters, H1077

diastolic muscle properties, effects of perfusion pressure on, H945

effect of substrates on cardiac redox and phosphates, H82

electrical heterogeneity, and ventricular wall regional differences in delayed rectifier K\* current components, H604

embryonic, coronary neovascularization, role of thyroid hormones, H811

enkephalins, Met-enkephalin-Arg-Phe effects on vagal control of heart rate, H848

force interval and staircase phenomena, and sarcoplasmic reticulum Ca<sup>2+</sup> load/gain relationship, H916 glutamate transport in sarcolemmal vesicles, H194

input pressure effects on anoxic and/or acidotic turtle heart, R683

insulin-stimulated glycogen synthesis, effect of myocardial work history, E48

intrapericardial denervation, effects on water immersion responses in rhesus monkeys, R1040

intrinsic nervous system, modulation by nitric oxide donors, R403

inward rectifying K<sup>+</sup> channels, human homologue (HHBIRK1), cloning and stable expression, H506

left, hemodynamic patterns, mathematical model for transmitral and pulmonary venous flow, H476

method for calculating rate of chemical flux through citric acid cycle, E397

microvascular endothelial cells, cytokine-inducible NO synthase in, H1293

mitral annulus, diastolic flow velocities, inhomogeneous spatial distribution in normal humans, H1232

myofilaments, caffeine effects on, nonrole of Ca<sup>2+</sup> binding to troponin C, C1348

nonworking abdominal heterograft, E48 norepinephrine kinetics and metabolism, aging effects on, R278

norepinephrine metabolism and proneness to diet-induced obesity, R389 physiology, teaching with echocardiogra-

phy, S2

postischemic contractile dysfunction, propionyl-L-carnitine effects on, H441

Purkinje fibers, electrophysiological effects of  $\alpha_2$ -adrenergic stimulation, H2024

retrograde cardioplegia, total microvascular flow, nutritive flow, and myocardial cooling during, H1555

right-to-left shunt, acute plus chronic hypoxemia from, effects on regional blood flow and oxygenation, H974

sarcoplasmic reticulum calcium pump, in cardiomyopathic hamster, effects of perindopril, H1947

sinoatrial node cells, angiotensin II inhibition of L-type Ca<sup>2+</sup> current in, H1053

subendocardial blood flow during coronary hypoperfusion, effects of endothelin vs. adenosine, H1284 tetramethylammonium as cardiac mus-

carinic agonist, C1414 transmitral venous flow velocity, math-

ematical model, H476 vagal innervation in lower vertebrates.

physiological correlates, R1249 ventriculoatrial facilitated conduction, effects of sequential pacing times,

volume overload, reversibility of ventricular and myocyte structural and functional changes, H2345

## Heart cells

single gap junction hemiplaques revealed by atomic force microscopy, C968

#### Heart disease

Chagas' cardiomyopathy, epicardial cellular electrical properties, H1258

cyanotic congenital, tolerance to hypothermia alone or with cardioplegia, at various ages, H1165

#### Heart failure

from cardiomyopathy, role of early increased Ca<sup>2+</sup> influx via L-type channels, H999

model for, by use of Ca<sup>2+</sup>-free, then high-Ca<sup>2+</sup>, perfusion, H1061

pacing-induced, altered vagal and sympathetic control of heart rate, R310 pacing-induced, left ventricular suben-

docardial function, H1788 renal sympathetic nerve activity, arterial

vs. cardiac baroreflex defects, R112 severe, activation of renin-angiotensin system, relation to ANP effects on

renin release, H2281 ventricular ANP synthesis during, H391

#### Heart rate

see also Arrhythmias; Hemodynamics

atrial, effects on atrial natriuretic peptide secretion, roles of stroke volume and extracellular fluid shift, R1129

autonomic control

in complete vs. incomplete quadriplegia, effects of provocative maneuvers, H2239

time domain characterization using autoregressive moving average analysis, H2232

baroreceptor control, effects of aging on, studies in ambulatory humans, H1606

baroreceptor reflexes and arterial compliance in athletes and hypertensives, H411

and blood pressure, use to determine cardiac baroreflex sensitivity by statistical dependence, R382

carotid baroreflex control, modulation by cardiopulmonary baroreceptors, effects of exercise, H1567 developmental patterns, H56

effects of GABA<sub>A</sub> receptor blockade in hypothalamic dorsomedial nucleus, G514

effects of intrarenal adrenomedullin infusion, F657

exercise effects on carotid-cardiac baroreflex latency, H1208

in fetus, after carotid occlusion, and immaturity of vagal afferent buffering systems, R343

intrinsic and variability, effects of aging on, H1441

oscillations in sleep apnea, relation to blood pressure oscillations, role of carotid body chemoreflex, H2145 pacing

asynchrony, effect on left ventricular load-dependent relaxation, H17

heart failure from, left ventricular subendocardial function, H1788 supraventricular tachycardia, effects

on cardiomyocyte relaxation rate, H2104 timing effects on retrograde facilitated

conduction, H384

responses evoked from caudal raphe nuclei, R1295

responses to visceral afferent stimulation after cord transection, H2077

in spontaneous baroreflex, beat-by-beat interactions with blood pressure, H1682

dependence on R-R interval, H1688 spontaneous variability in anesthetized dog, H7

vagal and sympathetic control changes in left ventricular dysfunction and heart failure, R310

physiological correlate of vagal innervation in lower vertebrates, R1249

**Heart surgery** 

tolerance to hypothermia alone or with cardioplegia, at various ages in cyanotic heart disease, H1165

Heart ventricles

see also Arrhythmias; Cardiac hypertrophy; Cardiomyocytes, ventricular; Myocardium

contractility, modulation by interleukin-1β, role of G proteins and L-type Ca<sup>2+</sup> current, C339

endothelial cells, vs. great vessel endothelial cells: morphology, growth, PG release, H250 hypertrophy, CHF, and ANP synthesis,

H391

best myocardial strain indexes for mapping ischemic regions using tagged MRI in 3-D, H1918

compliance and contractility, androgenic steroid effects on, H1096 contractile failure, inducing by use of Ca<sup>2+</sup>-free, then high-Ca<sup>2+</sup>, perfu-

sion, H1061 dynamic regional shape changes,

method to assess longitudinal curvature, H2553 dysfunction, role of cardioplegic arrest

and myocardial edema, H178 early diastolic regional pressure gradients, causes of, H550

effects of tachycardia-induced cardio-

myopathy, H2426

epicardial vs. midmyocardial myocytes, regional differences in delayed rectifier K+ current components, H604

filling index, normal spatial inhomogeneity of mitral transannular flow velocities, H1232

flow distribution during coronary hypoperfusion, effects of endothelin vs. adenosine, H1284

function and mass during and after tachycardia-induced cardiomyopathy, H836

hypertrophy, and renin-angiotensin system in AT-1 transgenic cardiomyocytes, H1471

integrated model of myocardial mechanics, coronary flow, and interstitial transport, H633

load-dependent relaxation, effect of asynchrony and ryanodine, H17 mechanical determinants of relaxation, H170

mechanics, effects of ventricular interaction and vascular volumes, H2125 motion and deformation at 1 week after coronary occlusion, H1304

myocyte postinfarction contractility and calcium dynamics and effects of propionyl-L-carnitine, H1702

portal vein stenosis, effects on papillary muscles, G410

postischemic dysfunction, and [Ca2+]i homeostasis, H100

pressure, role in coronary flow amplitude (Letter to Editor) H2162 subendocardial function in pacing-

induced heart failure, H1788 volume measurement by conductance catheter, gain factor variability within cardiac cycle, H1490

method for obtaining normal human myocytes from biopsies for electrophysiological studies, H1757

microvascular endothelial cells, cytokine-inducible NO synthase in, H1293

muscle cells, excitability changes, role of inward rectifier, model study, H1181

right

in cardiac ischemia-reperfusion, beneficial effects of low pHi and low [Ca2+], H1510

endocardial endothelial cells, electrophysiology, H2036

hypertrophy, effect on right ventricular infarct size, H1781

hypertrophy, natriuretic peptide mRNA levels and distribution, H162

ischemic, inotropic stimulation effects on energy metabolism and systolic function, H1821

papillary muscle, perfusion pressure effects on diastolic stress-strain relations, H945

thyroid-induced changes in Na+-K+ pump, effects on action potential duration, H1838

stretch-induced arrhythmias role of Ca2+ and Na+ influx, H1803 viscoelastic properties of cross bridges in trabeculae, H987

#### Heat regulation, see Thermoregulation

Heat shock proteins

**HSP 70** 

cardiac transcription factor activation by heat and exercise, C1387 effects of oxidative stress on mRNA

and protein, in coronary venular endothelial cells, H1651

effects on heart peptide initiation during head-down tilt, C1375 induction by exercise and effect of

body temperature, R92 polysomal, and slowing of polypeptide elongation during skeletal muscle atrophy, C1369

HSP72, tissue specificity at high body temperatures, R28

Heat stress

effect on transepithelial daunomycin secretion in proximal tubule, F135 effects on thermoregulation, and sex dif-

ferences in blood flow distribution, tissue-specific HSP72 response, R28

Hematocrit

effects of thromboxane A2 receptor activation, R366

myocardial, epicardium-endocardium gradient: effect of erythrocyte deformability, H260

Heme iron

and reactive oxygen species in pulmonary vascular disorders, L321

Heme oxygenase

hemoglobin-induced induction in pulmonary endothelial cells, L321

Hemochromatosis

hepatic fibrosis in, and iron-induced lipocyte activation, G451

Hemodynamics

(1S,3R)-1-aminocyclopentane,1,3,-dicarboxylic acid effects on, R1026 adrenomedullin actions in conscious

sheep, H2574

aortic, in newborn vs. fetus, H558 cardiac, after severe burns, hypertonic saline-dextran effects, H856

central and peripheral, responses to graded head-down tilt, R1289

effects of C-type natriuretic peptide infusions in sheep, R201

effects of pericardial pressure on coronary capacitance and coronary and systemic hemodynamics, H1593

hormonal and autonomic control during hemorrhage, effects of hypertension on. H2302

hyperglycemia-induced changes, glutathione effects on, E1167

measurements, adjusting for body surface area, superiority of regression over indexing, R978

of microvasculature, and oxygen delivery to tissues, H802

reduced venous distensibility and venous volume in obesity and hypertension,

renal

dietary protein level and renal microcirculatory effects of angiotensin II, L-type calcium channels at resistance

artery bifurcations, F251 time- and dose-related effects of indo-

methacin, F468 response to hypotensive hemorrhage,

role of nitric oxide, R171 responses to vasopressin during V1 re-

ceptor blockade, in baroreflex deficiency, R156 role of endothelin, H432

in septic shock

effects of fluids and catecholamines, H692

effects of NO synthase inhibitors, H1634, H2017

systemic, effects of long-term endothelin infusions, R375

Hemoglobin

effects on inhaled NO in pulmonary veins, H1422

human recombinant, esophageal effects and chest pain from therapeutic use as blood substitute, G443

as iron source for iron-derived reactive oxygen species in pulmonary endothelium, L321

polymerization, in sickle cells, role in impaired filterability, H2003

Hemorrhage

see also Hypotension, hemorrhagic adenosine 5'-triphosphate-magnesium chloride use after, effects on endothelial cell function, H1390

β-adrenergic receptor downregulation, G749

blood volume and plasma protein restoration after, role of intestinal food and water, R715

cardiovascular response, effects of hypertension on hormonal and autonomic control, H2302

cardiovascular, vasopressin, and renin responses, role of brain angiotensin II. R1500

effects on mesotocin and vasopressin secretion by brushtail possum marsupial, R1319

hypercoagulation from, and effects on plasminogen activator inhibitor-1, E1065

hypovolemic, vasopressin response in rat, role of medullary A1 noradrenergic cell group, R1336

intracranial, vasoconstriction from, possible role of phospholipids, H2048

Heparin

binding sites, and hepatocyte growth factor/scatter factor bioavailability

effects on pulmonary artery smooth muscle cell proliferation in normotensive vs. pulmonary hypertensive rats, L465

with Intralipid, effects on venous distensibility in obesity and hypertension, R562

Hepatic artery

vascular bed, hemodynamic effects of endotoxin shock, H1106

Hepatic nerves

afferent, role in glucose homeostasis, R50

sympathetic, role in exercise-induced glucose production, R72

sympathetic, role in exercise-induced rise in hepatic glucose production, E636

Hepatocyte growth factor

chemotaxis and tubulogenesis from, requirement for phosphatidylinositol 3-kinase, F1211

stimulatory effects on bronchial epithelial cells, changes in neoplasia, L1012

# Hepatocyte growth factor/scatter factor

bioavailability and effects on liver growth, G380

Hepatocytes

adenosine 3',5'-cyclic monophosphate synthesis, mechanism of bile acid suppression, G300

albumin gene expression, regulation by insulin, glucagon, and dexamethasone, E6

amino acid transport in, effects of protein malnutrition, E368

basolateral dicarboxylate/cholate antiport system, G797

basolateral sodium-taurocholate cotransport, effects of prolactin, G11

bile acid-induced apoptosis, role of serine protease translocation to nucleus, G613 death by anoxia or electron transport inhibition, role of Ca<sup>2+</sup> and mitochondrial permeability transition, C676

gap junctions, changes in expression and function after common bile duct ligation, C1186

gluconeogenesis in, mechanism of hypoxia-induced inhibition, E965

glucose output and urea production, effects of nitric oxide on, G183

indicator dilution curves, effects of intralobular zonal variation on rate constants, G189

periportal and perivenous, effects of cold acclimation on gluconeogenic response to norepinephrine and glucagon, E1184

permeabilized, ryanodine-induced Ca<sup>2+</sup> release, G1017

tolbutamide-inhibited phosphorylation of 6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase, E391

tumor necrosis factor and interleukin-6 production, epinephrine effects on, R896

Hexokinase

in skeletal and cardiac muscle, adaptive response to exercise, R130

Hexose

deprivation, and B-cell non-response to glucose, protective effects of succinic acid monomethyl ester, E580

Heymann nephritis autoantibody and plasminogen system in L2 rat yolk sac carcinoma cell line, C442

Hiatal hernia

and mechanics of phrenic ampullary emptying, G320

Hibernation

brain glucose utilization rates in active and hibernating squirrels, R445 α<sub>2</sub>-macroglobulin gene expression in

ground squirrel, and acute phase response, R1507

High-energy phosphates, see Phosphates, high-energy

Histamine

airway smooth muscle cell proliferation from, vasoactive intestinal peptide effects on, L1047

dual effects on pulmonary vascular tone and role of prostanoids, H653

effects on mesothelial cell [Ca<sup>2+</sup>], L63 effects on pancreatic goblet cell degranulation, G24

and ileal circular muscle response to substance P, G161

mesenteric microvascular leakage sites from, and actin cytoskeleton changes, H316

Histamine receptors

H<sub>1</sub>, role in antigen effects on bronchial parasympathetic ganglia, L879

H<sub>2</sub>, colonic secretions from, role of VIPergic and cholinergic pathways, G465

 $H_1$  vs.  $H_2$ , role in pulmonary vascular tone, H653

Histones

epithelial cytotxicity, effects on membrane ionic permeability, C1114

Hoe-140 (bradykinin B<sub>2</sub> receptor antagonist) effects on skeletal muscle arteriolar tone and dilation to bradykinin, H1628

Homeostasis

nonlinear chaotic dynamic aspects of arterial blood pressure and renal blood flow, H621

Hormones

gonadal steroid, cardioprotective potential in premenopausal women, H377 in muscle metabolism, control by local

vasomodulation (review), E797 pro sequence removal, furin role in proparathyroid hormone-related peptide processing, E832

Host defenses, see Acute phase response

Human immunodeficiency virus

effects of aging and dietary composition on serum levels in rat, C952

gp120 envelope glycoprotein

activation of astrocyte large-conductance K<sup>+</sup> channels, C1440

synthesis, leukoregulan-induced, in orbital vs. dermal fibroblasts, C382

Hyaluronan

myocardial lymph levels in cardioplegic arrest, H178

Hydralazine

effects on intracellular sodium and pH, C366

Hydration

effects on colonic motility in fowl, R690

Hydraulic conductivity

of endothelial cells, effects of shear stress on, H535

Hydrochloric acid

gastric, and cloning of protein kinase A-activated Cl<sup>-</sup> channel, C191

Hydrocortisone

effects on free vs. sulfoconjugated catecholamines, in fetus vs. preterm newborn, E28

in hormone-induced differentiation of Na<sup>+</sup> transport across larval bullfrog skin, C218

Hydrogen ion

see also Sodium-hydrogen exchange extracellular, effects on acetylcholineinduced nonselective smooth muscle cation channels, C162

Hydrogen ion transport

osmotically activated, in smooth-muscle vs. Chinese hamster ovary cells, C147

in proximal tubule  $pH_i$  regulation, effects of luminal and basolateral  $CO_2/HCO_3^-$ , F179, F193

Hydrogen peroxide

in bronchial epithelial cells, effects of prior cytokine-induced superoxide dismutase, L71

cardiovascular reflexes from, and myocardial ischemia-reperfusion effects, H2114

DNA strand breaks from, in pulmonary epithelial cells, L471

effects on cardiomyocytes, role of intracellular copper- and zinc-containing superoxide dismutase, H1115

myocardial damage from, protective effect of hypoxia, H614

effects on surfactant biosynthetic enzymes in type II cells, L129

- effects on tracheal epithelial cell membrane conductance and permeability, L284
- oxidant damage from, DNA injury and repair after, in tracheal epithelial vs. mesothelial cells, L832
- pathogenetic role in menadione cytotoxicity, C227
- proximal tubular epithelial cell injury from, role of lipid peroxidation, F30
- role in pulmonary hypoxic vasoconstriction, L546
- Hydrogen-adenosinetriphosphatase vacuolar, role in pH<sub>i</sub> regulation in mac-
- rophage J774A.1 murine cells, C210 **Hydrogen-peptide cotransport** in MDCK cells, expression and calmodu-
- in MDCK cells, expression and calmodu lin dependence, F391 Hydrogen-potassium ATPase
- gastric and colonic isoforms, presence in kidney, F581
- gastric,  $\alpha$ -subunit structure and functional expression, C1207 and omeprazole effects on parietal cells
- (letter to the editor), G387 α-subunit mRNA, cellular distribution
- in kidney, F99
  β-subunit, renal and gastric expression,
- F363
  Hydrostatic pressure
- role in renal concentrating mechanism
  (August Krogh lecture), R1087
  R-β-Hydroxypentanoate
- metabolism and toleration after R-1,3pentanediol infusion, E446
- 8-Hydroxy-2-(di-n-propylamino)tetralin
- phase resetting in hamsters, effects of aging on, R293
- 3-Hydroxybutyrate and ketone body ratio, use in quantifying oxidative liver injury, G471
- 5-Hydroxyindalpine effects on veratridine-evoked pancreatic amylase secretion and c-fos expres-
- amylase secretion and c-fos expression, G339 **Hydroxyl radicals** and peroxynitrite chemistry (review),
- L699 role in asbestos-induced pulmonary epithelial cell damage, L471
- 10-Hydroxylase extrarenal, and  $1\alpha,25$ - $(OH)_2D_3$  deficiency in uremia, F746
- 11β-Hydroxysteroid dehydrogenase NAD-dependent, in colonic epithelial cells, C1467
- 5-Hydroxytryptamine (5-HT), see Serotonin
- Hypercalcemia malignancy-associated, furin role in proparathyroid hormone-related peptide processing, E832
- Hypercapnia acidosis from, NO contribution to coronary vasodilation during, H39
- airway smooth muscle relaxation from, role of pH<sub>i</sub>, L207
- effects on choline whole body release and clearance, R1520 effects on dystrophic hamster response
- to thyroxine, R779 effects on K<sup>+</sup>-induced contractions in bronchial rings, L642

- effects on pH<sub>i</sub> in brain and skeletal muscle of two lizard species, R889
- prostaglandin production from, roles of intra- and extracellular pH and Ca<sup>2+</sup> signaling, H591
- Hypercortisolism
  - depression-induced, effects on adrenal and cardiovascular responses to mental stress, R865
- Hyperemia
- see also Ischemia-reperfusion; Oxygenation
- postischemic, and effects of aging on vasoreactivity, in beagle, H92
- Hyperglucagonemia
- in infections, role in increased gluconeogenesis, E92
- Hyperglycemia
  - and endothelial-dependent and -independent vasodilation in Zucker diabetic rat, H2366
  - glucose uptake during, effects of plasma insulin level, E1089
  - hemodynamic changes from, glutathione effects on, E1167
  - insulin secretion after, in vitro vs. in vivo, role of muscarinic activation, R475
  - role in altered blood-nerve barrier permeability, H740
- Hyperoxia
  - in bronchial epithelial cells, effects of prior cytokine-induced superoxide dismutase, L71
- and cyclooxygenase inhibition, roles in regulating pulmonary perfusion, H1521
- 85% O<sub>2</sub>
  - 14 days of exposure, effects on type I collagen, transforming growth factor- $\beta_1$ , and related genes, L78
  - lung toxicity from, basic fibroblast growth factor and its receptor, gene expression in lung, L455
- lung response to, interleukin-8 and monocyte chemoattractant protein-1 mRNA expression, L826
- 100% oxygen, effects of aging on survival time response, L539
- pulmonary induction of A- and D-type cyclins and cyclin-dependent kinases during recovery, L625
- Hyperparathyroidism
- from sustained intravenous neutral phosphate loading, F802
- Hyperplasia
  - of pulmonary artery smooth muscle cells, in normotensive vs. pulmonary hypertensive rats, L465
  - vs. hypertrophy, renal, after unilateral vs. subtotal nephrectomy, F793
- Hyperpolarization
  - transient, role in termination of currentinduced early afterdepolarizations, H2440
- Hypersensitivity reactions
  - antigen effects on bronchial parasympathetic ganglia, role of histamine  $H_1$  receptors, L879
  - food protein-induced GI allergy, effects on colon longitudinal muscle contractility, G764
- Hypertension see also Portal hypertension

- after ibotenic acid destruction of amygdalar neuronal perikarya in young SHR, R1171
- baroreflex changes in, role of arterial compliance, H411
- baroreflex sensitivity in, determining from blood pressure and heart rate by statistical dependence, R382
- blunted pressure-dependent changes in vasa recta blood flow and natriuresis in SHR, effects of L-arginine, F907
- and cardiac β-myosin heavy chain gene expression, effect of caloric restriction, R33
- chronic
- with endothelial dysfunction, role of endothelins, R375
  - with endothelin elevations, role of renin-angiotensin system, R395
- tissue damage from, role of oxygen free radicals, H1418
- and defective dopamine-1 receptor-adenylate cyclase coupling in Dahl rat tubules, R231
- dietary sodium and cardiopulmonary baroreflex control of renal sympathetic nerves, H61
- effect on NPY/NPY Y<sub>1</sub> receptor/G protein complex in rat brain cortex,
- effects on hormonal and autonomic control of cardiovascular response to
- hemorrhage, H2302 from chronic NO synthase inhibition, roles of renin-angiotensin and sympathetic nervous systems, H2267
- from N<sup>G</sup>-nitro-L-arginine methyl ester, role of renal medullary blood flow, R317
- gonadal hormone role in, R40 insulin resistance in, and α-adrenergic inhibition of glucose uptake in
- muscle, E305 mechanisms of potassium's protective effects (review), R825
- medullary ventrolateral and dorsomedial vasomotor neurons, hyperreactivity in hypertensive rats, H1499
- Na<sup>+</sup>/H<sup>+</sup> exchange in vascular smooth muscle, in normo- vs. hypertensive rats, C14
- norepinephrine release from hypothalamic paraventricular nucleus in DOCA rats vs. SHR, H1549
- properties of humoral factors trophic for aortic smooth muscle cells, H767

pulmonary

- embolic, Starling resistor vs. distensible vessel models, H817
- hypoxia-induced, and atrial natriuretic peptide receptor gene expression in lung, L328
- hypoxic, role of lung endothelin-1, L95 hypoxic, role of endothelin-1 and protective effects of bosentan, H828
- of newborn, blockage site in NO vasodilation pathway, H1483
- pressor response and thromboxane B<sub>2</sub> release from arachidonic vs. eicosapentaenoic acid, H2252
- selective pulmonary vascular resistance reduction by inhaled cGMP analogue, H2056

Hypertension (continued)

sites of inhaled NO-induced vasodilation, H1422

in utero, altered reactivity to endothelium-dependent vasodilators, H288 vascular cell proliferation in, role of static wall tension, H1133

vascular smooth muscle cell proliferation in normotensive vs. pulmonary hypertensive rats, L465

reduced venous distensibility and venous volume, R562

relation to central potassium homeostasis in DOCA rats, H646

renal, hemodynamic and microcirculatory changes, H33

role of insular cortex-mediated autonomic responses in Wistar and spontaneously hypertensive rats,

salt-induced, and pressure natriuresis, in Dahl rat, role of NO, H2375

salt-sensitive, and chloride role in variable renal response to cyclooxygenase inhibition, F561

Hyperthermia, see Heat stress Hyperthyroidism

reduced pressure diuresis and natriuresis response, role of renin-angiotensin system, E897

and triiodothyronine stimulation of renal epidermal growth factor, F128

Hypertonic saline alone or with mannitol, effects on hypothalamoneurohypophysial activity in rat, R651

effects on vasopressin secretion after sustained hypovolemia, R349 natriuresis from, role of oxytocin, R634

Hypertonic saline-dextran

as burn therapy, effects on cardiac contractility and hemodynamics, H856 Hypertonicity

effect on anion exchangers AE1 and AE2 in Xenopus oocytes, C201

effect on Na-K-Cl cotransport in cerebral vascular endothelial cells, C747

vasopressin stimulation by, role of synaptic connection with anterior hypothalamus, R1034

Hypertrophy

vs. hyperplasia, renal, after unilateral vs. subtotal nephrectomy, F793 Hyperuricemia

insulin effect on uric acid excretion in humans, E1 Hypoaminoacidemia

and effects of local epinephrine infusion on muscle metabolism, E55

Hypocapnia

effects on K+-induced contractions in bronchial rings, L642 Hypoglycemia

counterregulatory mechanisms, role of

hepatic-adrenal afferents, R50 gluconeogenic counterregulatory response, insulin effects on, E521

hypoxia from, in newborn, cerebrovascular responses and role of adenosine,

insulin-induced, catecholamine secretion from, effect of hepatic denervation,

insulin-induced, muscle glucose uptake and metabolism, E248

Hypoglycemic agents

A-4166, effects on ion channels in pancreatic β-cells, E185

Hyponatremic encephalopathy

age, gender, vasopressin, and gonadal steroid effects on brain damage and survival, R1143

Hypophosphatemia

effects on Na+-Pi transporter adaptation to phosphate deficiency, G917

X-linked, murine Hyp homologue, osteoblast phenotype abnormalities (review), F357

Hypophysectomy

and triiodothyronine stimulation of renal epidermal growth factor, F128

Hypotension

baroreceptor resetting, role of viscoelasticity, H1773

and effects of right heart baroreceptors on vasopressin, ACTH, and renin secretion, R1069

endotoxin-induced, effects of nitric oxide synthase inhibitors, H2017

from vena caval occlusion, effects on sympathetic efferents and baroreflex responsiveness, R859

hemorrhage-induced, effects on cerebrocortical capillary blood flow, H2202

hemorrhagic, myoglobin nephrotoxicity during, role of capillary blood flow changes, F839

hemorrhagic, role of nitric oxide in hemodynamic response, R171

role of presympathetic GABAB receptors in rostral ventrolateral medulla,

in septic shock, from endotoxin-induced vascular hyporeactivity, role of nitric oxide, G177

Hypothalamic peptides

and ACTH release, effects of cortisol on, E85

Hypothalamic-pituitary-adrenal axis (1S,3R)-1-aminocyclopentane,1,3,-dicarboxylic acid effects on, R1026

cholestatic suppression of hypothalamic PGE<sub>2</sub> and effects on IL-1-induced ACTH release, G404

effects of interleukin-18, tumor necrosis factor-α, and both, E551

fetal, effects of stress and glucocorticoids, E1096

response to mental stress, effects of aging and depression on, R865 site of free fatty acid actions, R1484

Hypothalamic-pituitary-gonadal axis and gonadotropin-releasing hormone levels in pituitary after orchidectomy in rat, E685

Hypothalamoneurohypophysial sys-

and water intake, regulatory role of plasma osmolality vs. sodium levels in rat, R651

Hypothalamus, see Brain, hypothalamus

Hypothermia

alone or with cardioplegia, tolerance of congenitally hypoxemic myocardium at various ages, H1165

and ambient temperature effects on secretagogue-induced changes in prolactin and growth hormone levels,

brain glucose utilization rates in active and hibernating squirrels, R445

effects of fever from poly I:C on shivering threshold and thermosensitivity, R1266

effects of ramplike total body cooling in fever from poly I:C, R1257

endotoxin-induced transient hypothermia, roles of macrophages and TNF-α, R989

Hypotonicity

effect on anion exchangers AE1 and AE2 in Xenopus oocytes, C201

effects on taurine permeability of proximal tubule basolateral membrane,

Hypovolemia

effects on mesotocin and vasopressin secretion by brushtail possum marsupial, R1319

effects on vasopressin secretion, role of adaptive resetting of volume control mechanism, R349

vasopressin response in rat, role of medullary A1 noradrenergic cell group,

Hypoxemia

acute superimposed on chronic, effects on regional blood flow and oxygenation, H974

congenital, myocardial tolerance to hypothermia alone or with cardioplegia, at various ages, H1165

effects on oxygen, glucose, and lactate uptake in fetus, placenta, and uterus, R303

fetal, effects on hypothalamic corticotropin-releasing hormone and vasopressin, E1096

fetal, from reduced uterine blood flow vs. maternal N2 inhalation, effects on fetal hormones and urine production, F868

Hypoxia

see also Anoxia

airway smooth muscle relaxation from role of Ca<sup>2+</sup> entry inhibition, L201 role of pH<sub>i</sub>, L207

of artery wall, at bifurcations: role in atherosclerosis, H155

cerebral vasodilation from, in newborn, effects of opioids and NO, H226

critical myocardial intracellular O2 level, response to progressively lower Po2, H1675

effect on eicosanoid synthesis in cardiomyocytes, H308

effects on arteriolar α-adrenoceptor constriction, H2068

effects on atrial natriuretic peptide receptor gene expression in lung,

effects on [Ca2+]i, vs. anoxia, reoxygenation, and metabolic inhibition, H1045

effects on choline whole body release and clearance, R1520

effects on dystrophic hamster response to thyroxine, R779

effects on endothelial cell functions and integrity, H749

effects on fish gill arterioarterial and artericvenous branchial vasculature,

effects on protein kinase C actions on Na+-K+-ATPase in proximal convoluted tubule, C1277

effects on stretch-induced smooth muscle cell bromodeoxyuridine uptake, H1133

energy metabolism in fish white muscle during, R1178

hepatic, effects on E. coli-induced TNF-α expression, G311

hypoglycemic, in newborn, cerebrovascular responses and role of adenosine, H871

inhibition of cytochrome-c oxidase, L918 inhomogeneous perfusion pattern in ischemic myocardium, roles of cellular redox state and capillary blood flow, H2183

and maximal oxygen uptake during single-leg knee extension exercise, H1453

mechanism of gluconeogenesis inhibition in hepatocytes, E965

myocardial, effects on atrial natriuretic peptide release, H2352

pressor response in lung, effects of adenosine agonists and antagonists, H1862

prolonged, sustained arterial contraction from, role of endothelium, H1015 protective effect on H<sub>2</sub>O<sub>2</sub>-induced myo-

cardial damage, H614 proximal tubule injury from, fatty acid accumulation and membrane dam-

age, F110
pulmonary hypertension from, role of
endothelin-1 and protective effects

of bosentan, H828 pulmonary hypertension from, role of lung endothelin-1, L95

pulmonary vasoconstriction from changes in [Ca<sup>2+</sup>]; and tension, and role of PKC, H301

role of FAC, 1301 effects of leukotoxin on, L123 role of cytochrome P-450, C259 role of NADPH oxidase, L747 roles of guanylate cyclase activation by

NO and  $H_2O_2$ -catalase, L546 response of carotid body glomus cell  $[Ca^{2+}]_i$ , developmental changes,

L801 role in regulation of angiogenic growth factor, C1362

stimulation of capillary network formation in pulmonary microvessel endothelial cells, L789

ventilatory, effects of angiotensin receptor blockers on pulmonary vascular responses, L302

Hypoxia-reoxygenation
delayed cardiomyocyte relaxation, effects

of cGMP, H2396

## Ileitis

changes in enteric neural regulation of smooth muscle, G823

#### Ileum

circular muscle, contraction-inducing tachykinin receptors in dog, G161 intrinsic factor degradation by cathepsin L, G33

output to colon, effects on proximal colonic tone, G95 peptide YY trophic actions, G71

#### Iloprost

effects in cortical collecting ducts, F145
Immersion

cardiovascular, endocrine, and renal responses in rhesus monkey, effects of cardiac denervation, R1040

thirst attenuation during, role of plasma volume vs. osmolality, R583

#### Immune system

acute phase response to influenza A virus, behavioral changes and cytokine levels, R78

age-related changes, effects of dietary fish oils, R208

communication with brain, vagotomy effects on endotoxin-induced IL-1β mRNA induction in brain, R1327

human CC10 gene, possible chromosomal linkage to atopy and IgE receptor, L565

β<sub>2</sub>-microglobulin effects on food intake, R1513

interaction with neuroendocrine system, epinephrine effects on hepatic TNF and IL-6 production, R896

interaction with sympathetic nervous system, interleukin-1 effects on splenic blood flow, R902

# Immunoglobulin receptors

for IgE, possible chromosomal linkage of human CC10 gene, L565

#### Impotence

vasculogenic, role of age-related decline in penile NO synthesis, H467

# Incretins

effects on amino acid-induced insulin secretion, E949

natural vs. synthetic, human vs. porcine, comparative insulinotropic effects, E645

#### Indomethacin

cyclooxygenase inhibition from, effects on eosinophil chemotaxis and airway narrowing, L446

delayed gastric ulcer healing from, effects of omeprazole and basic fibroblast growth factor on healing, G276 and effects of hepatic hypoxia on *E. coli*-

induced TNF-α expression, G311 effects on early postnatal lung develop-

ment, L56
effects on prostacyclin receptor-medi-

ated cerebral vasodilation, H1884 gastric mucosal effects after chronic as-

pirin doses, G134 time- and dose-related effects on renal hemodynamics and blood flow auto-

# regulation, F468 Indoxyl sulfate

effects on pituitary uptake of thyroid hormones and release of thyroidstimulating hormone, E974

# Infants

#### see also Newborn

calcium channel-gated Ca<sup>2+</sup> release in atrial myocytes, H1195

hypoxemic, myocardial tolerance to hypothermia alone or with cardioplegia, at various ages, H1165

interconversion of plasma lactate and glucose during fasting, E652 maturation of bile acid metabolism, tri-

iodothyronine effects on, E889 Infarction-reperfusion, see Ischemiareperfusion Infection, see Sepsis

# Inflammation

acute phase reactants and biomarkers of normal aging, R536

acute pulmonary, effects of endotoxin, cytokine-induced neutrophil chemoattractant, and anti-CINC, L245 acute, role in postnephritis glomerulo-

sclerosis, F258

of airways, chemoattraction and bronchoconstriction in guinea pig tracheal explants, L446

cyclooxygenase constitutive and inducible isoforms in alveolar vs. peritoneal macrophages, L294

elastase and IL-1β secretion from, effects of aging and dietary fish oils, R208

gastric mucosal adaptation to chronic aspirin doses, G134

gastrointestinal, and transepithelial neutrophil migration, polarity of early adhesion, C472

human ČC10 gene chromosomal locus and expression in airway epithelial cells, L565

indexes of, during colitis, relation to electrolyte transport changes, G622

leukocyte recruitment, stimulus- and cell-specific chemokine expression by pulmonary stromal cell populations, L856

leukocyte rolling in mesenteric postcapillary venules, subtype differentiation in vivo, H909

mediators, and neutrophil-glomerular endothelial cell interactions, F1

mediators of, effects on inducible NO synthase gene expression in type II cells, L501

microvascular leakage sites from, and endothelial actin cytoskeleton changes, H316

neurogenic, tracheal, role of neurokinin receptors in leukocyte-endothelial adhesion, L263

neutrophil-endothelial interactions in coronary microvessels, H490 possible role of angiotensin II as inhibi-

tory neuropeptide in brain, C700 pulmonary

interleukin-8-induced transcellular eosinophilic chemotaxis, L117

surfactant protein A-endotoxin interactions, L144

roles of leukotriene  $B_4$  and extracellular  $Ca^{2+}$  in phospholipase  $A_2$  activation, C138

# Inflammatory airway disease

see also Asthma

corticosteroid effects on epithelial cell secretory leukocyte protease inhibitor, L601

human CC10 gene expression in airway cells and evidence of link to asthma, L565

tannin-mediated calcium influx in alveolar macrophages, and arachidonic acid release, L33

#### Inflammatory bowel disease see also Colitis

changes in enteric neural regulation of smooth muscle, G823

#### Inflammatory disorders

Graves' ophthalmopathy, role of leukoregulan-induced hyaluronan synthesis, C382 Inflammatory response

from extracorporeal circulation, effects of kallikrein inhibitors on neutrophil elastase release, H1352

zymosan-induced, effects on glucose and insulin, E219

Influenza virus

acute phase response to, behavioral changes and cytokine levels, R78

Ingestive behaviors, consummatory phases

cholecystokinin vs. amino acid effects on, highly nutritive diet vs. sucrose, R520

effects of neuropeptide Y on, R423 Inhibitory junction potentials nonadrenergic noncholinergic, roles of

NO and K<sup>+</sup> channels, G831

Inhibitory nonadrenergic noncholinergic nervous system. see Non-

ergic nervous system, see Nonadrenergic noncholinergic inhibitory system Inorganic phosphate, see Phosphates,

inorganic; Sodium-phosphate symport

Inositol

osmotic regulation, F983

**Inositol phosphates** 

and calcium transients in airway smooth muscle cells (review), L1

and smooth muscle stretch-activated phospholipase C activity, C458

**Inositol** trisphosphate

and lithium potentiation of angiotensin II-stimulated vasoconstriction, H2009

Inositol 1,4,5-trisphosphate

calcium release from, and pathways mediating smooth muscle relaxation, C171

and dual serotonin effects on Ca<sup>2+</sup> channels in aortic smooth muscle cells, H544

and gastrin-cholecystokinin-B receptors on J.RT3-T3.5 Jurkat cells, G522

role in strain-induced fetal lung cell increase, L729

structural requisites for Ca<sup>2+</sup> influx, C1485

Inositol 1,4,5-trisphosphate receptors different types in rat kidney, F1046

Inotropic stimulation

effects on energy metabolism and systolic function in ischemic right ventricle, H1821

Insomnia

circadian reentrainment, effects of periodic bright light and social cues, R528

Insulin

see also Insulin resistance; Insulin response; Insulin sensitivity

actions during pregnancy, low-protein diet effects on, E722

as cause of skeletal muscle glucose transporter GLUT-4 translocation to plasma membrane, E613

and cortisol effects on energy expenditure and protein metabolism, E501

effects on adipose tissue, reciprocity with glucocorticoids, R1209

effects on angiotensin II actions in glomerulosa cells, E100

effects on bronchial epithelial cell fibronectin production, L230 effects on counterregulatory response to hypoglycemia, E521

effects on glucose metabolism in guinea pig brown fat cells, R98

effects on glucose transport and extracellular distribution, E712

effects on hepatocytes from protein-deficient suckling rats, E368

effects on plasma glucose and free fatty acids in fish, R1163

effects on skeletal muscle glucose transport kinetics, C30

effects on uric acid and sodium excretion in humans, E1

in glucose and protein metabolism, changes in chronic renal failure, role of acidosis, E121

glucose transport stimulation by, growth hormone effects on and changes with age, E902

glucose uptake stimulation by, in sedentary vs. endurance-trained low insulin responders, E1046

as long-term energy balance regulator, reciprocity with glucocorticoids, R142

mimetic effects of peroxyvanadium compounds in vivo, E60

muscle tissue sensitivity to small increments, E248

myocardial responsiveness, in working vs. nonworking heart, E48 plasma levels

changes in, pyruvate dehydrogenase response to, effects of high-fat diet

on, E752 effects of  $\beta_3$ -adrenergic agonist BRL-35135 in obese mice, E678

effects on glucose-mediated glucose uptake, E1089

effects on muscle glucose disposal and glycogen synthase activity, E1031 posprandial rise, role of interleukin-1, E255

plasminogen activator release from platelets, H117

regulation of albumin gene expression in hepatocytes, E6

release from pancreas, bradykinin effects on, E1027

role in low-Po<sub>2</sub> stimulation of glucose production, E1174

role in magnesium deficiency effects on glucose metabolism, E925 secretion

amino acid-induced, effects of incretins and cholecystokinin on, E949

B cell secretory responses to D-glucose vs. nonglucidic nutrient secretagogues, C611

comparative effects of glucagon-like peptide-I-(7—36), vs. glucose-dependent insulinotropic polypeptide, E645

glucose-induced pancreatic, role of cholinergic receptors, E336

glucose-stimulated release, impairment by hexose lack or starvation, protection by succinic acid monomethyl ester, E580

mechanism of stimulation by hypoglycemic drug A-4166, E185

pulsatile, correlation with  $[Ca^{2+}]_i$  oscillations, E282

pulsatile, modeling analysis of possible feedback mechanism, C780

response to phospholipase A<sub>2</sub>, role of ATP-sensitive K channel, C181

stimulus-secretion coupling, mathematical model of glucokinase as glucosensor in  $\beta$ -cell glucose metabolism, E775

secretion after hyperglycemia, in vitro vs. in vivo, role of muscarinic activation, R475

secretion rate, effects of differing physiological states, E21

signaling in skeletal muscle, effects of contraction on, E987

stimulation of glucose transport in muscle, Ca<sup>2+</sup> effects on, R997

vs. glucagon, roles in glucose homeostasis during malnutrition, E873

vs. transforming growth factor-β1, regulation of insulin-like growth factor binding protein-2, E1199

zymosan-induced changes in, role of tumor necrosis factor, E219

Insulin receptor kinase

effects of peroxyvanadium compounds,

Insulin receptor substrate 1

phosphorylation defects, role in insulin resistance, E604

**Insulin receptors** 

in skeletal muscle, effects of immobilization on number and kinase activity, E980

Insulin resistance

and α-adrenergic inhibition of glucose uptake in muscle, E305

in hypoglycemic muscle, role of adrenergic mechanisms and hypoglycemia, E248

insulin effects on glucose transport and extracellular distribution, E712

relation of skeletal muscle fiber type to obesity and insulin-induced glucose transport, E453

roles of defects in phosphatidylinositol 3-kinase activation and insulin receptor substrate 1 phosphorylation, E604

sepsis-induced, role of interleukin-1, E255

of streptozotocin-induced diabetes, role of protein-tyrosine phosphatases, E932

waist-to-hip ratio and enhanced insulin sensitivity in older athletes, E484

Insulin response

effects of long-term diet restriction and changes with aging, E941

Insulin sensitivity

enhanced, from long-term aerobic exercise training, E484 peripheral vs. hepatic, effects of insulin

and glucose blood levels, E410

Insulin-like growth factor cytokine-binding proteins in lung (re-

view), L869 and IGF binding proteins, persistent

changes after trauma, R970 GF-I

actions in small bowel, effects of fasting and refeeding on, G631 effects on skeletal muscle Na+-K+ transport, E849

growth hormone effects on and changes with age, E902

mRNA expression after mechanical stimulation, E318

presence in bile, R266

role in  $\lceil Ca^{2+} \rceil_i$  control at cell cycle  $G_1/S$  interface, C856 in skeletal muscle, response to me-

chanical stimuli, E288

# Insulin-like growth factor binding protein 3

expression in small bowel, effects of fasting and refeeding on, G631

# Insulin-like growth factor binding proteins

absence in bile, R266

IGFBP-2, regulation by transforming growth factor- $\beta_1$  vs. insulin, E1199 IGFBP-3, effects on granulosa cell func-

tion, E1057

Insulin-like growth factor receptors
type 1, expression in small bowel, effects
of fasting and refeeding on, G631

Integrins

as collagen-binding receptors, in fetal lung fibroblasts vs. epithelial cells, L136

β<sub>2</sub>-Integrins

CD11b/18, role in neutrophil transepithelial migration, C472

#### Intercellular communication, see Communication, intercellular Interdigestive migrating myoelectric complex

regulatory role of duodenal pH, G146
Interferon-y-enhanced factor X

Interferon-γ-enhanced factor X and interferon-γ-induced MHC class II gene expression, C127

Interferons

IFN-α, into hypothalamic nuclei, effects on natural killer activity in spleen, R1406

IFN-y

effects on endothelin-1 release by alveolar epithelial cells, L192

effects on nitric oxide synthase expression in inner medullary collecting duct cells, F770

and MHC class II gene expression, roles of protein kinase C and tyrosine kinase, C127

plus IL-1β and TNF-α, astroglial nitrite formation from, effects of angiotensin II on, C700

role in PMN-mediated GI mucosal injury, G843

superoxide dismutase induction in bronchial epithelial cells, effects on later oxidant exposure, L71

lung and plasma levels during acute phase response to influenza A virus, R78

Interleukins

cytokine-binding proteins in lung (review), L869

IL-1

adrenocorticotropic hormone release, effects of cholestasis and role of impaired hypothalamic  $PGE_2$  release, G404

effects on endothelin-1 release by alveolar epithelial cells, L192

effects on splenic blood flow, role of sympathetic nerve fibers, R902

IL-1-induced tolerance to IL-1-induced lung injury, L12

metabolic effects and contribution to overall response to cytokines, E255

alone and with TNF-α, effects on hypothalamic-pituitary-adrenal axis, E551

effects on airway ciliary motility, L911 effects on glomerular laminin B2 chain mRNA and nuclear factor κΒ,

induction in brain by peripheral endotoxin, vagotomy effects on, R1327

levels in elderly after inflammatory stress, effects of dietary fish oils, R208

nitric oxide synthase induction in human vascular smooth muscle, H1122

plus TNF-α and IFN-γ, astroglial nitrite formation from, effects of angiotensin II on, C700

suppression of cardiomyocyte L-type calcium currents, role of G proteins, C339

IL-1α and IL-1β, effect on cytokine release from glomerulosa cells, E114

IL-1 and IL-6, lung and plasma levels during acute phase response to influenza A virus, R78

IL-2, and gastrin-cholecystokinin-B receptors on J.RT3-T3.5 Jurkat cells, G522

IL-4, and induction of 15-lipoxygenase in human monocytes, C1301

IL-6

arterial wall production, effects of aging and endotoxin, H2288 endocrinologic and metabolic effects in

humans, E813 hepatic production, epinephrine effects on, R896

release from glomerulosa cells and factors regulating release, E114

IL-8

see also Cytokine-induced neutrophil chemoattractant

in airway epithelial cells, stimulation by Staphylococcus aureus for neutrophil recruitment, L85

effects on neutrophil-glomerular endothelial cell interactions, F1

expression by pulmonary stromal cell populations, L856

induction of eosinophil chemotaxis through endothelium and epithelium, L117

mRNA expression in alveolar macrophages and PMNs in oxygen-injured lung, L826

Intermittent claudication

collateral and microvascular adaptation to arterial insufficiency and effect of exercise training, H125

physical training effects on collateral blood flow in peripheral arterial insufficiency, H1174

Internal mammary artery inducible L-arginine/nitric oxide path-

way, H1122
Interoceptive stimulation
amygdalar responses to, R666

**Interstitial fluid** 

flux across capillary endothelium into vasa recta, role of colloidal molecules, H2133

Intestinal acid

inhibition of gastric acid by, role of vagal and splanchnic afferents, G286

Intestinal peptides

in regulation of elasmobranch rectal gland secretion, R1359

Intestine

see also Colon; Colitis; Enterocytes; Rectum

absorption of structured triglycerides, effects of fatty acid type and structural position, G568

alkaline phosphatase, and apical appearance of surfactant-like particles, C1401

alkaline phosphatase, appearance and secretion in parallel with surfactant-like particles, E1205

anaphylaxis, food protein-induced, effects on colon longitudinal muscle contractility, G764

arterioles, endothelial-dependent and -independent vasodilation, in Zucker diabetic rat, H2366

brush-border membrane, inner and outer leaflets, differential sensitivity to oxidative damage, G260

epithelial cells, see under Epithelial cells

glucocorticoid-accelerated maturation, normal or deviant pathway?, G139 goblet cells, potassium conductance acti-

vation by Ca<sup>2+</sup> vs. cAMP, C1503 ion transport, in cystic fibrosis mouse vs.

humans, C297 ischemia-reperfusion

phospholipase A<sub>2</sub> role in neutrophil priming and lung injury, G397 quantifying oxidative injury in liver,

G471 postnatal, vascular resistance, nitric oxide role in regulation, G949

role in metabolic adaptations to reduced food intake in desert survival, R1101

uptake and interconversion of plasma n-3 polyunsaturated fatty acids, G732

Intestine, small

brush-border membranes ecto-ATPase in, G663

glucose transport, in vesicles, polyamine effects on, G416

crypt-villus axis organization and stem cell hierarchy during development in mouse, G813 digestive functions, vagovagal reflex con-

trol (review), G1 duodenum, chyme transport patterns

during fasting and postprandial states, G700

enterocytes

differentiation, role of laminin and merosin, G857

mucosal, respiration rates after graded ischemia, G116

glutamine and glucose metabolism in newborn enterocytes, R334

ileum, inflammatory changes in enteric neural regulation of smooth muscle, G823

#### Intestine, small (continued)

insulin-like growth factor system in, effects of fasting and refeeding on, G631

#### jejunum

alanine absorption, effects of vagal capsaicin-sensitive primary afferent fibers. G695

ectopic pacemakers after transection, relation to transit, G959

ion transport defects in cystic fibrosis, G505

lactase gene expression, effects of dietary carbohydrate or fat, G1066

lactase processing from prolactase and postweaning decline, role of pancreatic proteases, G41

motility induced by GABA<sub>A</sub> receptor blockade in hypothalamic dorsomedial nucleus, G514

peptide YY trophic actions and ontogeny of gene expression, G71

proximal resection, effects on acinar-cell somatostatin receptor-effector system, E343

role of nitric oxide in motor pattern regulation, G207

STC-1 cell line, phenylalanine-induced secretion in, role of calcium, G90

system y<sup>+</sup> transport of arginine by Caco-2 cells, changes with differentiation, G578

vitamin A trafficking in, roles of cytoplasmic retinol binding proteins, G224

#### Intracellular vesicular transport

caveolae-mediated, inhibition by N-eth-ylmaleimide, H48

### Intracranial pressure

elevated, effects on cerebrocortical capillary blood flow, H2202

#### Intralipid

with heparin, effects on venous distensibility in obesity and hypertension, R562

# Intrinsic cardiac nervous system

modulation by nitric oxide donors, R403
Intrinsic factor

intracellular degradation by cathepsin L, G33

#### Inulin clearance

drawbacks of constant-infusion technique, F543

#### Inward rectifier, see Potassium currents, inwardly rectifying Iodide channel

of thyroid gland, characterization in liposomes, C111

### Iodoacetate

skeletal muscle contracture from, effects on muscle metabolism, C317

# Ion and water efflux

from nonpigmented ciliary epithelial cells, mechanisms, C721

# Ion channels

see also specific ions

in airway smooth muscle cells (review),

electrophysiological studies, method for obtaining normal human ventricular myocytes from biopsies, H1757 molecular determinants of ion conduction and inactivation in  $K^+$  channels (review), C535

in pancreatic β-cells, effects of hypoglycemic agent A-4166 on, E185

stretch-activated depolarizations, and stretch-induced ventricular arrhythmias, H1803

#### Ion conductances

vasopressin effects in luminal and basolateral cortical collecting duct, F20

#### Ion currents

constant inward, early afterdepolarizations induced in cardiomyocytes, H2440

receptor-operated, in smooth muscle, role of H<sup>+</sup>, C162

transient inward, in ventricular myocytes, palmitoylcarnitine effects on, H2405

transient outward, in human pulmonary artery smooth muscle cells, H2358

in ventricular myocytes, changes during culture, C993, C1002

#### Ion transport

see also specific ion

in airway smooth muscle, L551

in collecting duct, effects of 5,6-epoxyeicosatrienoic acid, role of prostaglandins, F931

in cystic fibrosis mouse vs. humans, C297

in fetal distal lung epithelium, effects of mesenchymal-cell extracellular matrix, L762

in human fetal distal lung, L270

in marine fish, role of phosphocreatinecreatine kinase circuit, R1003 in middle ear SV40-transformed cell

lin middle ear SV40-transformed cell line, oxidant-induced changes, L390 osmotically activated, in smooth-muscle vs. Chinese hamster ovary cells,

C147 in renal epithelial cells, aldosterone and vasotocin effects on, C762

vasotocin effects on, C762 role in histone-induced epithelial damage, C1114

selectivity of renal K<sup>+</sup> channel, C389 sodium-potassium pump in endothelialcell energetics, H351

#### Ionomycin

effects on basal and insulin-stimulated muscle glucose transport, R997

#### Iron

chronic overload, hepatic fibrosis from, and iron-induced lipocyte activation, G451

free radical generation from, role in DNA strand breaks and relation to asbestos-induced lung injury, L471

reactive oxygen species from, lung endothelial heme as source, L321

transport into cells, tracking with fluorescent probe, C1354

#### Irritation

and lingual trigeminal nerve sensitivity to acids. R58

#### Ischemia

cardiomyopathy from, myocyte postinfarction contractility and calcium dynamics and effects of propionyl-Lcarnitine, H1702

#### cerebral

brain glucose utilization rates in active and hibernating squirrels, R445 inducible nitric oxide synthase role in

brain damage, R286

lactic acid-induced delayed neuronal death in, role of intracellular calcium, R506

effects on cellular and mitochondrial respiration rates in small intestine enterocytes, G116

left ventricular, best myocardial strain indexes for mapping using tagged MRI in 3-D, H1918

#### myocardial

arrhythmias during, effects of intraand extracellular acidosis on inward Na<sup>+</sup> current, H1749

arrhythmias during, role of thrombin receptor activation and lysophosphatidylcholine, H1740

carnitine palmitoyltransferase-I inhibition, role in reperfusion recovery, H2505

contractile dysfunction after, propionyl-L-carnitine effects on, H441

coronary collateral angiogenesis from, effects of protamine on, H720

dichloroacetate effects on carbohydrate metabolism and systolic function, H879

early effects of metabolic inhibition on coronary endothelial permeability, H1462

effects on atrial natriuretic peptide release, H2352

glutamate transport in heart sarcolemmal vesicles, H194

inhomogeneous perfusion pattern, roles of cellular redox state and capillary blood flow, H2183

non-roles of adenosine and ATP-dependent K channels in myocardial 'hibernation', H2294

palmitoylcarnitine-induced [Na<sup>+</sup>]<sub>i</sub> increase and transient inward current in ventricular myocytes, H2405 postischemic viability, structural and

metabolic correlates, H1265 reduced flow rate reperfusion, benefi-

cial effects, H2384 roles of glycogen depletion and limita-

tion of acidosis in reducing injury, H935 tolerance to, at various ages in con-

genital cyanotic heart disease, H1165 transmural flow distribution, effects of

endothelin vs. strenosis, H1276

transmural flow distribution, effects of vessel tone, H1284

#### renal

effects on epidermal growth factor transcription, from interruption of upstream promoter, F664

mitochondrial ATP production after, thyroxin effects on, F651

of right ventricle, effects of inotropic stimulation on energy metabolism and systolic function, H1821 sarcolemmal damage from, role of phospholipid physicochemical properties, H773

and skeletal muscle contracture, C317 of skeletal muscle, exercise-induced, role of muscle metaboreflex in restoring blood flow, H980

of splanchnic region, shock from, tumor necrosis factor- $\alpha$  and E-selectin production, H1412

subendocardial, role in pacing-induced heart failure, H1788

# Ischemia-reperfusion

see also Hyperemia; Ischemic preconditioning; Oxygenation

beneficial effects of reduced reflow rate, H2384

capillary no-reflow from, effects of ischemic preconditioning and role of ATP-sensitive K channels, H2063 cardiac

cholinergic and  $\alpha$ -adrenergic coronary vasomotor responses, H886 contractile dysfunction and  $[Ca^{2+}]_i$  homeostasis, H100

cerebral, 5-lipoxygenase, leukotriene C<sub>4</sub>, and oxygen free radicals during reoxygenation, H1249

hepatic

effects on pulmonary permeability, role of xanthine oxidase, G988 microcirculatory changes from, role of reactive oxygen species, G47

hypoxic protection against  $H_2O_2$ -induced myocardial damage, H614

injury from, role of complement component C5a, H448

intestinal

phospholipase  $A_2$  role in neutrophil priming and lung injury, G397 quantifying oxidative injury in liver, G471

of lung, effects of  $\alpha$ -adenosine receptor antagonists, L1036

myocardial

beneficial effects of low  $pH_i$  and low  $[Ca^{2+}]_i$ , H1510

beneficial effects of Na<sup>+</sup>/H<sup>+</sup> exchange inhibition, H1531

mechanisms of Ca<sup>2+</sup> overload-induced cell injury, H1239

oxidative stress effects on glutathione and HSP 70 in coronary venular endothelial cells, H1651

reflex cardiovascular responses, role of reactive oxygen species, H2114

role of intracellular copper- and zinccontaining superoxide dismutase, H1115

sodium and calcium intracellular levels and cell morphology during metabolic inhibition, H1239

in myocutaneous flap, neutrophil recruitment and lipoxygenase activation, role of leukotriene B<sub>4</sub>, H2167

sarcolemmal disruption during, role of phospholipid physicochemical properties, H773

ventricular arrhythmias from, effects of estrogen, H2569

ventricular fibrillation, from O<sub>2</sub>-derived free radicals in dogs, H295 **Ischemic preconditioning** 

benefits from, glycogen depletion and limitation of acidosis as mechanisms, H935

effects on postischemic capillary no-reflow, H2063

glycogen metabolism during, H364 mechanisms of anti-infarct vs. antiedema benefits, H233

myocardial role of adenosine in protective effects, H1149

role of opioid receptors in protective effects, H2157

role of NO as mediator in rat hearts, H242

role of protein kinase C in rat heart, H426

#### Isoflurane

effects on tracheal smooth muscle voltage-activated Ca<sup>2+</sup> channels, L187

Isoproterenol

and β-adrenergic agonist effects on acetylcholine release from tracheal parasympathetic nerves, L950

effects on peripheral vs. inner [Ca<sup>2+</sup>]<sub>i</sub> levels in airway smooth muscle cells, C771

smooth muscle relaxation from, mediating pathways, C171

# Ito cells, see Lipocytes

#### J

Jejunum

ontogenic changes, normal vs. glucocorticoid-accelerated, 5-bromo-2'-deoxyuridine effects, G139

Jet lag

circadian reentrainment, effects of periodic bright light and social cues, R528

#### K

Kainic acid

in raphe pallidus, gastroprotective effect, role of medullary thyrotropin-releasing hormone, G548

Kallikrein inhibitors

effects on neutrophil elastase release during extracorporeal circulation, H1352

Keratinocytes

ultraviolet B-inducible genes, identification and mechanisms, C846

o-Ketoacids

as H<sub>2</sub>O<sub>2</sub> scavengers, C227

α-Ketoglutarate

interaction with basolateral organic anion transporter in renal S3 proximal tubule, F1109

α-Ketoglutarate dehydrogenase complex

rate of chemical flux catalyzed by, method for estimating, E397

α-Ketoisocaproate

measuring whole body protein synthesis via <sup>13</sup>CO<sub>2</sub> vs. plasma precursor techniques, E174

α-Ketoisocaproic acid

hepatic metabolism in cirrhosis, E298
Ketone bodies

blood-brain barrier permeability during starvation, E1161 metabolism, effects of nocturnal rise in cortisol, E595

oxidative enzymes in newborn proximal convoluted tubule, developmental regulation by thyroid hormones, F634

precursors as potential nutrients, metabolism in pigs, E660

and propionyl-L-carnitine effects on ischemic cardiac contractile dysfunction, H441

R- $\beta$ -hydroxypentanoate and  $\beta$ -ketopentanoate metabolism and toleration, E446

Ketone body ratio

and 3-hydroxybutyrate, use in quantifying oxidative liver injury, G471

β-Ketopentanoate

metabolism and toleration after R-1,3pentanediol infusion, E446

Kidney

see also Kidney cells; Kidney diseases; Renal nerve; Sympathetic nervous system, renal

adrenomedullin glomerular and tubular localization and renal actions, F657

afferent arterioles, vasoconstrictor response to ATP, role of calcium influx, F876

angiotensin II receptors

AT<sub>1A</sub> and AT<sub>1B</sub> subtypes, mRNA localization, F220

 $AT_2$  subtype, mRNA distribution during development, F922

baroreceptor, role in effects of vertebral artery-infused angiotensin II, F296 blood flow

autoregulation, time- and dose-related effects of indomethacin, F468 cortical vs. medullary, during

L-NAME-induced hypertension, R317

intrarenal distribution, relation to renal perfusion pressure, F404 measuring with miniature ultrasonic

transit-time flow probes, F175 method for continuous drug infusion

into renal artery of rat in vivo, F967 nonlinear chaotic dynamic aspects, H621

and oxygenation in acute plus chronic hypoxemia, H974

Bowman's capsule parietal sheet, target for endothelin and platelet-activating factor, F1053

brush-border membrane, proline transport across, role of protein kinases, F155

catecholamine production and metabolism, vs. mesenteric organs and liver, G641

cellular distribution of H<sup>+</sup>-K<sup>+</sup>-ATPase α-subunit mRNA, F99

collecting ducts
AE1 anion exchangers in, variant

AE1 anion exchangers in, variant NH<sub>2</sub>-terminal cytoplasmic domains in chicken, F503

hepatocyte growth factor-mediated growth, requirement for phosphatidylinositol 3-kinase, F1211

hydrogen-potassium ATPase β-subunit expression, F363 Kidney (continued)

vasopressin effects on apical localization of aquaporin water channels, C1546

collecting ducts, cortical

endothelin-1 binding in, vasopressin effects on, F385

5,6-epoxyeicosatrienoic acid effects on ion transport and role of prostaglandins. F931

luminal prostaglandin E<sub>2</sub> effects on Na<sup>+</sup> and water transport, F1093

potassium transport in, effects of basolateral metabolic acidosis, F490 prostaglandin receptors in, F145

vasopressin role in luminal and basolateral ion conductances, F20

collecting ducts, medullary adaptation to dehydration, paracellu-

lar transport pathways, F53 inner medullary, nitric oxide synthase

expression in, endotoxin and cytokine effects on, F770

inner medullary, urea transport in, effects of low-protein diet, F1218 collecting tubules

 $\beta$ -adrenergic receptor subtypes in, F1070

cortical, apical high-conductance K channels in, effect of hyposmolarity on, F569

medullary, protein kinase C-stimulated activation of cAMP phosphodiesterase, F808

compensatory growth

after unilateral vs. subtotal nephrectomy, protooncogene expression and hypertrophy vs. hyperplasia, F793

after uninephrectomy, effect on metallothionein gene transcription, F643

concentrating mechanism, in insects and mammals, new hydrostatic pressure hypothesis (August Krogh lecture), R1087

continuous drug infusion into renal artery of rat in vivo, F967

coordinate regulation of parathyroid hormone receptor and Na- $P_i$  cotransporter, F1017

cortex

body mass, tissue metabolic rate, and sodium pump relations in mouse, rat, rabbit, sheep, and cattle, R641

sodium-bicarbonate cotransporter, role of G proteins in regulation, F461

sodium/hydrogen exchangers NHE1 and NHE3, ontogeny and effects of glucocorticoids, F815

diabetic hyperfiltration, renal hemodynamic effects of ACE inhibitors and role of kinins, F588

distribution of constitutive NO synthase isoforms in various mammal species, F885

dopamine  $D_{1A}$  receptor localization, F1185

dopamine production, effects of aging on, F1087

effects of C-type natriuretic peptide infusions in sheep, R201

effects of selenium deficiency on tissue type I 5'-monodeiodinase, E572 endothelin-1, vs. plasma ET-1, roles in blood volume homeostasis, H1829

epidermal growth factor, stimulation by triiodothyronine, F128

function

dietary protein-induced changes, aging effects on, F613

effects of long-term endothelin infusions, role of renin-angiotensin system, R395

effects of peptide YY, in normal humans, F754

measuring by constant-infusion technique, drawbacks, F543

nique, drawbacks, F543 function in laboratory rat, student exer-

cise, S49 glomerular and tubular interactions between adrenergic activity and nitric oxide, F1004

glomerular filtration rate

effects of dietary protein level, F302 effects of long-term endothelin infusions, R375

role of renin-angiotensin system, R395

glomerular pressure, errors in estimating from macromolecule sieving data, F736

glomerulus

angiotensin II production in, mediation by renin-angiotensin system, F266 angiotensin II-induced changes, mor-

phometric analysis, F82 capillary network, heterogeneous vs.

conventional model, F972 handling of circulating glycosylated albumin, F913

tight junction formation, tyrosine phosphorylation of protein ZO-1, F514

hemodynamics

dietary protein level and renal microcirculatory effects of angiotensin II, F302

and sodium excretion, roles of endothelin receptor subtypes, F455 time- and dose-related effects of indo-

methacin, F468

hemodynamics, measurements, adjusting for body surface area, superiority of regression over indexing, R978

Henle's loop

bicarbonate transport, role of adrenal steroids, F234

Henle's loop, thick ascending limb calcium-elevating nucleotide receptors, F496

tors, F496 medullary segment, Na<sup>+</sup>/H<sup>+</sup> exchanger isoforms expressed, F1224

vs. proximal tubule, differing growthinducing effects of angiotensin II,

vs. proximal tubule, fenoldopam effects on protein phosphatase 1, F279

Henle's loop, thin ascending limb amiloride-sensitive Na<sup>+</sup>/H<sup>+</sup> antiporter and pH<sub>i</sub> regulation, F410 dynamics of cytosolic Ca<sup>2+</sup>, F1148

hydrogen-potassium-ATPase gastric and colonic isoforms, F581 in hypertension, mechanisms of potassium's protective effects (review), R825

inner medullary collecting duct, vesicle fusion proteins in, C792

inositol 1,4,5-trisphosphate receptors, F1046

ischemia

effects on epidermal growth factor transcription, from interruption of upstream promoter, F664 mitochondrial ATP production after,

thyroxin effects on, F651 juxtaglomerular apparatus, ontogeny of

NO synthase and renin, F1164 juxtaglomerular renin secretion

NO effects in perfused juxtaglomerular apparatus, F953

NO effects on isolated granular cells, F948

juxtamedullary preglomerular vasculature, effects of cGMP-dependent dilators on autoregulatory responses, F338

lpha-ketoacids as  $m H_2O_2$  scavengers, C227 macula densa, role in effects of vertebral artery-infused angiotensin II,

medulla

mathematical model of concentrating mechanism, effect of vasa recta flow, F698

mathematical model of concentrating mechanism, F680, F693

organic osmolyte response to water loading and water deprivation, F227

osmolyte regulation, molecular basis (Cannon lecture), F983

vasopressin-activated, calcium-mobilizing receptor, F1198

medullary cells, osmotic regulation of glycerophosphocholine synthesis, C402

metanephroi, fulminant apoptosis in bcl-2-deficient mice, F73

microcirculation changes, role in myoglobin nephrotoxicity during hemorrhagic hypotension, F839

microvascular permeability, effects of thromboxane  $A_2$  receptor activation, R366

mitochondria, sodium/hydrogen antiport, C1227

natriuretic response

to extracellular volume expansion, roles of prostaglandins and NO, R1442

to hypertonic and isotonic saline, role of oxytocin, R634

nephron

distal, distribution of ROMK1 inwardly rectifying, ATP-sensitive K\* channel, F1124

distribution of ROMK isoforms of inwardly rectifying and ATP-sensitive K<sup>+</sup> channels, F1132

juxtamedullary vs. subcapsular, maturation, F634

leukocyte common antigen-related protein mRNA distribution in rat, F1102

ouabain-sensitive K<sup>+</sup>-ATPase, distribution and properties, F1141 and vascular structures, localization of aquaporin-1 water channels,

norepinephrine kinetics and metabolism, aging effects on, R278

outer medulla, potassium channel ROMK1, sensitivity to pHi, C1173 potassium channel ROMK2, ion selectiv-

ity, kinetics, effects of blockers, C389

pressure-dependent changes in vasa recta blood flow and natriuresis. blunting in SHR, effects of L-arginine, F907

proximal tubule cell cultures, glucose metabolism, effects of glucose, lactate, and oxygen levels in medium, C1053

regional blood flow, pressure dependency within autoregulation range, F404

resistance arteries, L-type calcium channels at bifurcations, hemodynamic role, F251

response to water immersion in rhesus monkey, effects of cardiac denervation, R1040

responses to atrial natriuretic factor, effects of pregnancy on, F416 sensory receptors, effects of essential

fatty acid deficiency, R164 sodium excretion, role of endogenous central opioids and effects of dietary sodium restriction, R723

in sodium/hydrogen exchanger activation, C283

sodium-phosphate transporter, adaptation to phosphate deficiency, effects of hypophosphatemia, G917

sodium-potassium cotransporter, in Xlinked Hyp mice, effects of dietary Pi restriction, F1062

sympathetic nerve, responses evoked from caudal raphe nuclei, R1295

analysis of lithium (letter), F1229 early proximal convoluted, chloride transport mechanisms, F723

tubules, distal convoluted and connecting, calcium channel β-subunits, characterization, F525

tubules, proximal

cAMP-stimulated Cl- transport, F204 clearance of endogenous vs. exogenous lithium and effects of dietary sodium levels, F718

cells transfected with AT1 angiotensin II receptor, signaling and growth responses, C925

defective dopamine-1 receptor-adenylate cyclase coupling in Dahl rats, R231

dopamine DA1 receptors, photoaffinity labeling differences in normotensive rat and SHR, F1009

dopamine, protein phosphatase 1, and Na+-K+-ATPase relations, F279 inorganic phosphates, cellular levels

and membrane transport, F375 membrane potential and basolateral tetraethylammonium transport in snake, R1539

P-glycoprotein-mediated secretion of cyclosporin analog, F46

reabsorption, roles of adnergic activity and NO. F1004

role in endothelin-mediated renal functions, F455

S3 segment, basolateral organic anion transporter, F1109

S3 segment, pHi regulation, CO2/HCO3 effect on acid extrusion, F179, F193

sodium/hydrogen exchanger, postnatal maturation, effects of prenatal cortisol on, F710

sodium-phosphate cotransport, in brush-border, defects in murine Xlinked hypophosphatemia (review),

sodium-phosphate cotransporter, dietary phosphate-regulated, F626

sodium-phosphate cotransporter, in mouse: cloning, genetic mapping, and expression analysis, F1038

sodium-phosphate cotransporter, parathyroid effects on, F784

somatolactin effects on Pi and Ca2+ transepithelial transport in flounder, R577

straight segment, transport inhibition by atrial natriuretic factor, role of angiotensin II, F730

transepithelial daunomycin secretion, effect of heat shock, F135

tubules, proximal convoluted

basolateral membrane permeability to taurine, effects of hypotonicity,

chloride/base exchange in superficial vs. juxtamedullary nephrons, F847 diffusional potassium reabsorption,

mitochondrial oxidative enzymes in newborn, regulation by thyroid hormones, F634

protein kinase C effects on Na+-K+-ATPase, role of oxygenation, C1277

tubuloglomerular feedback

angiotensin II dependence in hypertensive ren-2 transgenic rats, F821 effects of K channel blockade with

barium, F960

instantaneous and steady-state measures of open-feedback-loop gains, F163

ureters, obstruction in newborn, regulation of renal growth factors and clusterin by angiotensin AT1 receptors, F1117

uric acid and sodium excretion, insulin effect on in humans, E1

variable response to cyclooxygenase inhibition, role of chloride, F561

vasa recta, interstitial fluid entry into, role of colloidal molecules, H2133

vascular endothelial growth factor and its receptors, sites of, in fetus and adult, F240

V<sub>1</sub> vasopressin receptor, effects on sodium and water excretion, R796

Kidney cells

of collecting duct

cell line mIMCD-K2, cellular mechanisms of electrogenic Cl- secretion,

cell line mIMCD-K2, electrogenic Na<sup>+</sup> and Cl- transport in, F347

cGMP production, atrial natriuretic peptide effects during pregnancy, F416

principal cell K+ channels, Ca2+/ calmodulin-dependent protein kinase II effects on, F211

principal cell Na+ channels, feedback regulation and response to cAMP,

of distal nephron, vasotocin effects on whole cell currents, F64 epithelial see Epithelial cells, renal

glomerular

endothelial, neutrophil interactions, lipoxygenase product formation and cell adhesion, F1

epithelial, interleukin 1ß effects on laminin B2 chain mRNA and nuclear factor kB, F273

juxtaglomerular, renin release from, relative potencies of endothelins,

mesangial

collagen production by, effects of periodic high extracellular glucose, F13

differential gene expression, CArG box motifs regulating smooth muscle α-actin promoter, F760

identification of serotonin receptor 5-HT<sub>2A</sub> subtype, F122

nitric oxide effects on cytosolic K+, F1081

serotonin activation of phospholipase

tubular, distal convoluted, sodium entry mechanisms, F89

tubular, epithelial

epidermal growth factor inhibition of Na-P: cotransport in, F309

peptide transport in, H+-dependent, calmodulin-regulated system in MDCK cells, F391

tubular, proximal

cytoresistance from protein synthesis blockade, F1154

epithelial, cGMP-activated Cl- channel, F323

epithelial, H2O2 damage, role of lipid peroxidation, F30

epithelial, β1-adrenergic receptors on,

fatty acids, albumin-bound, metabolic fate, F1177 fatty acids, injury-associated accumu-

lation, F110 glucocorticoid upregulation of Na-K-

ATPase α and β subunits, F862 β2-microglobulin endocytosis, endo-

somal convergence of apical and basolateral pathways, F829

parathyroid hormone-induced rise in [Ca2+]i, mechanisms, F330

receptor-mediated albumin endocytosis, effects of endosomal pH, F899 temperature-sensitive SV40-immortalized cell line, F435

**Kidney diseases** 

autosomal dominant polycystic kidney, water channel proteins in cyst epithelial cells, F398

constant-infusion technique for measuring renal function, drawbacks, F543

#### Kidney diseases (continued)

glomerulonephritis

immune-mediated, glomerulosclerosis after, role of early inflammation, F258

role of lipoxygenase products from neutrophil-glomerular endothelial cell interactions, F1

glomerulosclerosis, after anti-glomerular basement membrane nephritis, role of acute inflammatory phase, F258

model for renal hypoplastic disease, bcl-2-deficient mouse, F73

nephrotic syndrome, effects on apolipoprotein AI catabolism in rat, F532 proteinuria, metabolic fate of albumin-

bound fatty acids, F1177 stones, crystal adhesion to renal epithelial cells, inhibition by urinary anions, F604

Kidney failure, acute

1,25-(OH)2D3 deficiency, and kinetics of extrarenal 1α-hydrolase, F746

'acquired resistance', effects of protein synthesis inhibition, F1154

and effects of ischemia on epidermal growth factor transcription promoter, F664

Kidney failure, chronic

acidosis effects on insulin actions in glucose and protein metabolism, E121

dietary protein level and renal microcirculatory effects of angiotensin II, F302

furan fatty acid and indoxyl sulfate effects on pituitary uptake of thyroid hormones, E974

gastric mucosal hypertrophy from, role of gastrin, G586

protein restriction in, long-term adaptive changes in whole body protein turnover, E668

Kidney transplant

effects on glucose homeostasis and renin response during exercise, E636

Kinins

see also Bradykinin

role in renal hemodynamic effects of ACE inhibitors in diabetic hyperfiltration, F588

**Kupffer cells** 

TNF and interleukin-6 production, epinephrine effects on, R896 uptake of oxidatively modified chylomi-

crons, G709

**Kyphoscoliotic mouse** skeletal muscle mechanical power and myosin composition, C513

L-162,313

nonpeptide structure and angiotensin II-mimicking actions, R820

L2 rat yolk sac carcinoma cell line plasminogen system characterization in, C442

Laboratory

for students, on osmosis and reflection coefficient, S10

Lacrimal glands

acinar cells, Ca2+-activated Cl- channels in, pHi effects on, C647

acini, phospholipase D activation, role of cholinergic receptors, protein kinase C. and Ca2+, C713

α-Lactalbumin

capillary permeability to, effects of atrial natriuretic peptide on, H1139

ontogenic intestinal changes, normal vs. glucocorticoid-accelerated, 5-bromo-2'-deoxyuridine effects, G139

Lactase-phlorizin hydrolase

jejunal synthesis, effects of dietary carbohydrate or fat, G1066

prolactase processing and postweaning decline, role of pancreatic proteases, G41

Lactate

blood concentrations, in endotoxic shock, effects of antioxidant U-74006F, H1847

coinfusion with glucose, effects on autoregulation of hepatic glucose production in traumatic stress, E630

influx into red cells, mechanism in athletic vs. nonathletic species, R1121

interconversion with glucose in fasting infants, E652

intracellular, response to progressively lower myocardial Po2, H1675

metabolism, in marsupial skeletal muscle, vasoconstrictor effects on,

metabolism, in proximal tubule cell cultures, effects of glucose, lactate, and oxygen levels in medium, C1053

oxidation, in ischemic heart, effects of dichloroacetate, H879

and pyruvate, plasma and tissue isotopic enrichment values, problems with use, E880

release from muscle, effects of local epinephrine infusion, E55

transport in skeletal muscle, effects of denervation, R884

uptake in hypoxic fetus, placenta, and uterus, R303

Lactate dehydrogenase

release from endothelial cells under varying oxygenation states, H749

**Lactated Ringer solution** 

as burn therapy, effects on cardiac contractility and hemodynamics, H856

Lactation

febrile response to E. coli endotoxin in rat, R919

intrahypothalamic release of oxytocin and vasopressin, functional consequences and controversies (review).

Lactic acid

aerobic production, role in vascular smooth muscle energetics, H713

delayed neuronal death from, role of cytosolic calcium increases, R506

Laminin

B2 chain, interleukin 18-induced mRNA levels in glomerular epithelial cells and role of nuclear factor kB, F273 extracellular, role in enterocytic differ-

entiation, G857 Lateral line system

of aquatic vertebrates, stereociliary bundle structure and function (reLearning by writing (editorial), S1, S81

Lectins

use as markers in cell differentiation studies, G553

Leech

electrogenic, amiloride-sensitive Na+ transport in dorsal skin, R605

Leucine

kinetics in fetus, cortisol effects on, E1114

metabolism, effects of exercise plus β-adrenergic blockade, E910

recycling and protein synthesis rates in brain, age-related changes, R549

Leukocyte common antigen-related protein mRNA distribution along rat nephron

segments, F1102 Leukocytes

see also Eosinophils; Monocytes; Neutrophils

endothelial interactions

from NO synthase inhibition by endogenous NG, NG'-dimethyl-L-arginine, H2224

induction by oxidized chylomicrons, mechanisms, H2175

in glomeruli, lipoxygenase product formation and cell adhesion, F1

in postcapillary venules, from oxidized LDLs and modulation by NO, H1643

endothelial-cell adhesion

in pulmonary artery, nucleotide-stimulated, role of ATP-binding proteins, L666

in trachea, role of neurokinin receptors and relation to plasma leakage, L263

injury from, quantifying oxidative injury in liver, G471

migrating, measurement of locomotive force generation, C1308

platelet interactions, aggregation from NO synthase inhibition by endogenous NG, NG'-dimethyl-L-arginine, H2224

recruitment, stimulus- and cell-specific chemokine expression by pulmonary stromal cell populations, L856 rolling in microvessels

study in isolated coronary vessels, H490

subtype differentiation in vivo, H909 Leukoregulin

hyaluronan synthesis from, in orbital vs. dermal fibroblasts, C382 Leukotoxin

vasodilating effects in pulmonary circulation, L123

Leukotrienes

LTB4, eosinophil chemotaxis and bronchoconstriction from, L446 LTB4, role in phospholipase A2 activa-

tion in neutrophils, C138 LTB4, synthesis, during colitis, relation

to electrolyte transport changes, G622

LTB<sub>4</sub>, role in postischemic neutrophil recruitment and lipoxygenase activation in myocutaneous flap, H2167

LTC4, and lipoxygenase inhibitor effects on platelet-derived growth factorinduced mitogenesis, C604

LTC4, in brain, production and distribution during postischemic reperfusion, H1249

and neutrophil-glomerular endothelial cell interactions, F1

Leupeptin

role in intrinsic factor degradation, G33

bright, use in reentrainment of human circadian rhythms, R528 continuous exposure, effects on rat circa-

dian rhythms, R1111 Lingual nerve proper (trigeminal nerve)

and chorda tympani-induced submandibular salivation and vasodilation,

Linoleate

effects of fasting-refeeding cycling on tissue stores, R498

and role of prostaglandins in renal sensory receptor activation, R164 vasodilating effects in pulmonary circu-

lation, L123 α-Linolenate

effects of fasting-refeeding cycling on tissue stores, R498

Lipid A component of endotoxin effects on surfactant protein A-endotoxin interactions, L144

Lipid peroxidation

mitochondrial, effects of chronic hypertension, H1418

role in proximal tubular epithelial cell injury from H2O2, F30

Lipid peroxides

role in smoking-induced platelet hyperactivity, H678

Lipid storage

in adipose tissue, glucocorticoid and insulin effects, R1209 in brown adipose tissue, effects of corti-

costerone, R183

Lipids

from surfactant, uptake and metabolism by alveolar macrophages, L772 kinetics and metabolism, interleukin-6

effects in humans, E813 Lipocytes

activation by chronic iron overload, G451

platelet-derived growth factor-induced mitogenesis, effects of lipoxygenase inhibitors on, C604

Lipogenesis

and measuring glucose oxidation by respiratory calorimetry vs. isotopic tracers, E789

Lipolysis

catecholamine-induced, regional variations, mechanisms, E1135

from β-adrenergic stimulation, effects of dehydroepiandrosterone, R1374 and gluconeogenic counterregulatory

response to hypoglycemia, E521 periodic, of internal vs. external white fat pads in hamster, and differential

sympathetic innervation, R744

Lipopolysaccharide, see Endotoxin Lipoprotein lipase

gene expression, exercise effects in skeletal muscle vs. adipose tissue, E229 murine gene promoter, DNA motifs and tissue-specific expression, E213

Lipoproteins

see also Apolipoproteins

triacylglycerol-rich, postprandial clearance in adipose tissue, impairment in obesity, E588

and triiodothyronine effects on maturation of bile acid metabolism, E889

Lipoproteins, low-density

oxidized, effects on leukocyte-endothelial cell interactions in postcapillary venules, H1643

solvent drag and sieving in crossing high-permeability microvessels, H1982

Liposomes

surfactant protein A-carrying, pH-sensitive, for delivering antioxidant enzymes to pulmonary type II cells, L374

use for characterizing iodide channel of thyroid, C111

use in gene transfer by tracheal insufflation, L1052

Lipoxins

and neutrophil-glomerular endothelial cell interactions, F1

Lipoxygenase

activation in postischemic recruited neutrophils in myocutaneous flap,

products generated during neutrophilglomerular endothelial cell interactions, F1

5-Lipoxygenase

in brain, cytosolic to membranous redistribution during postischemic reperfusion, H1249

effects of inhibition on eosinophil chemotaxis and airway narrowing,

15-Lipoxygenase

in human monocytes, characterization, inhibition, and comparison with soybean 15-lipoxygenase, C1301

Lipoxygenase inhibitors

effects on platelet-derived growth factorinduced mitogenesis, in fat-storing cells, C604

12-Lipoxygenase pathway

in angiotensin II-induced aldosterone synthesis, insulin effects on, E100

Lithium

analysis in renal tubular fluid (letter),

endogenous vs. exogenous, renal clearance and effects of dietary sodium levels, F718

potentiation of angiotensin II-stimulated vasoconstriction, mechanisms, H2009

Liver

see also Hepatocytes

acute phase response and a2-macroglobulin gene expression during hibernation in ground squirrel, R1507

β-adrenergic receptors, downregulation after hemorrhagic shock, G749

alanine transport, effects of starvation and sensitivity to sulfhydryl groups,

amino acid transport, in protein-deficient suckling rats, £368

angiotensin II receptor AT1A and AT1B subtypes, F220

blood flow, response to exercise, effects of liver transplant, E636

body mass, tissue metabolic rate, and sodium pump relations in mouse rat, rabbit, sheep, and cattle, R641

catecholamine production and metabolism, vs. mesenteric organs and kidney, G641

cholestasis and opioid mRNA expression, G346

cirrhosis, metabolism of α-ketoisocaproic acid, E298

cirrhosis, renal sympathetic nerve activity, arterial and cardiopulmonary baroreflex control, R117

denervation, effects on response to glucagon, E194

E. coli-induced TNF-α expression, effects of hypoxia-reoxygenation,

effects of selenium deficiency on tissue type I 5'-monodeiodinase, E572

in endotoxemic hyporeactivity to phenylephrine, role of nitric oxide, G177 enhanced metallothionein synthesis af-

ter uninephrectomy and compensatory renal growth, F643

exercise-induced glucose production in, role of sympathetic hepatic nerve activity, R72

fat-storing cells, platelet-derived growth factor-induced mitogenesis, effects of lipoxygenase inhibitors on, C604

in fetus, glutamine-glutamate exchange with placenta, E705

fibrosis and cirrhosis, from chronic iron overload, and iron-induced lipocyte activation, G451

glucagon role in sepsis-induced increased gluconeogenesis, E92

gluconeogenic response to norepinephrine and glucagon, cold acclimation effects on, E1184

glucose metabolism during exercise, effects of endurance training on, E375 glucose production

autoregulated, effects of traumatic stress, E630

exercise-induced rise, effects of liver or kidney transplant, E636

glucose receptors in, and hypoglycemia counterregulatory mechanisms, R50

growth, induced by hepatocyte growth factor/scatter factor, G380 hepatoma SKHep1 cell line, connexin 45

gap junction channels in, C356 hepatomesenteric release and removal of

norepinephrine, R924 indicator dilution curves, effects of intra-

lobular zonal variation on rate constants, G189

injury

from common bile duct ligation, effects on hepatocyte gap junction communication, C1186 from galactosamine and endotoxin,

role of endothelin-1, G997 from portal vein-derived oxidants,

quantifying, G471 insulin sensitivity, role in magnesium deficiency effects on glucose metabo-

lism, E925 ischemia-reperfusion, effects on pulmonary permeability, role of xanthine oxidase, G988

#### Liver (continued)

lovastatin effects on phospholipid metabolism in rat, G242

lysosomal uptake and transport of organic cations, G480

microsomes

pancreatic polypeptide receptors, solubilization and identification, G215 ryanodine-induced Ca<sup>2+</sup> release, G1017

microvasculature, circulatory status and transport function, effects of reactive oxygen species, G47

mitochondria, estrogen and progesterone effects on: role in acute fatty liver of pregnancy, G107

monooxygenases, and effects of neonatal phenobarbital on growth hormone secretory patterns, E439

organic anion uptake

basolateral dicarboxylate/cholate antiport system, G797

sodium-independent basolateral mechanism in skate, G18

portal venous and hepatic arterial vascular beds, hemodynamic effects of endotoxemia, H1106

protein synthesis in, effects of age, nutritional state, and exercise, E328 recognition of galactosylated proteins,

G849

regeneration
DNA synthesis, effects of bile acids
and role of amidation, G1051
role of epidermal growth factor from

salivary glands, G872 tumor necrosis factor and interleukin-6 production, epinephrine effects on,

R896

uptake of oxidatively modified chylomicrons, G709

Liver disease

cardiac dysfunction from, cardiac  $\beta$ -adrenoceptors and portal vein stenosis, G410

cholestatic

bile acid-induced hepatocyte apoptosis in, role of serine protease translocation to nucleus, G613 opioid mRNA expression, G346

Liver transplant

effects on glucose homeostasis during exercise, E636

Locomotor activity

circadian rhythm in rat, effects of continuous light, R1111

Lovastatin

effects on hepatic phospholipid metabolism in rat, G242

Low-density lipoprotein receptor gene induction by isoform-specific platelet-derived growth factor, C1033

Lung

see also Alveolar cells; Muscle, smooth, airway; and Pulmonary

aberrant surfactant protein C in hereditary surfactant protein B deficiency, L647

adenosine-induced vasodilation, receptor subtype involved, H1862

adrenomedullin-induced vasodilation, from whole molecule vs. fragments, H2211 alveol

 α<sub>I</sub>-antitrypsin levels, effects on small vesicular vs. tubular myelin surfactant metabolic subtypes, L438

early postnatal development, effects of indomethacin and role of prostaglandin L56

epithelial cells, endothelin-1 synthesis, receptors, and signal transduction in. I.192

tannin-mediated arachidonic acid release from macrophages, role of calcium influx, L33

asbestos-induced toxicity, role of ironcatalyzed free radicals and DNA strand breaks, L471

atrial natriuretic peptide receptor, gene expression, effects of hypoxia on, L328

 $\beta_2$ -adrenoceptors, glucocorticoid effects

on transcription rate, L41 clearance of surfactant protein B and saturated phosphatidylcholine, L636

cytokine-binding proteins (review), L869 development

alternative-splicing expression of tenascin, role of transforming growth factor-β, L173

constitutive endothelial NO synthase regulation, L589

early postnatal, indomethacin effects on, L56

integrins as collagen-binding receptors, in fibroblasts vs. epithelial cells, L136

ontogeny of procollagen type I synthesis sites during human lung development, L309

endotoxin-induced TNF and NO, ethanol effects on, L991

fetal

dexamethasone effects on tropoelastin expression, L491

distal epithelium, bioelectric properties and chloride secretion, L270

gene transcription of fatty-acid synthase, glucocorticoid stimulation and effects of retinoic acid on, L683 surfactant protein B gene expression, roles of transcription and mRNA

stability, L481 fetal cells

> effect of O<sub>2</sub> dose on surfactant protein mRNA expression and phospholipid production, L818

mesenchymal, extracellular matrix from, effects on distal lung epithelial ion transport, L762

strain-induced increase, role of phospholipases C and D and protein kinase, L729

inflammation

effects of endotoxin, cytokine-induced neutrophil chemoattractant, and anti-CINC, L245

interleukin-8-induced transcellular eosinophilic chemotaxis, L117

macrophages, migrating, measurement of locomotive force generation, C1308

microvascular permeability, effects of thromboxane A<sub>2</sub> receptor activation, R366 parenchyma, muscarinic receptor subtype distribution and effects on adenylyl cyclase, L101

perfusion, roles of cyclooxygenase inhibition and hyperoxia in regulation, H1521

permeability, effects of hepatic ischemiareperfusion, role of xanthine oxidase, G988

pulmonary vascular bed, pressor responses to vasoconstrictors, effects of PKC inhibitors on, L532

secretion and clearance of ACTH, E845 sensitized, antigen-induced changes, effects of neurokinin depletion on, L781

small cell cancer, cell line as model for studying atrial natriuretic peptide secretion, H1869

stimulus- and cell-specific chemokine expression by pulmonary stromal cell populations, L856

structure and function in dystrophic hamster, thyroxine effects on, R779

surfactant biosynthetic enzymes, effects of  $H_2O_2$  in type II cells, L129

in type II cells, L129 secretion regulation by ATP, role of protein kinase C, L108

vascular disorders, reactive oxygen species in, role of heme iron, L321

vascular leakage, see Edema, pulmonary

vasculature, endothelin receptor subtypes present in newborn piglets, L607

viral pneumonia, cytoplasmic motility in alveolar macrophages, role of NO, L399

Lung disease

diffuse granulomatous, roles of cyclooxygenase inhibition and hyperoxia in regulating pulmonary perfusion, H1521

Lung injury

alveolar epithelial type I cell protein  ${
m rTI_{40}}$  as marker, L181

edematous

and IL-1-induced tolerance to IL-1induced injury, L12

interstitial, from botulinum C<sub>2</sub> toxin, role of endothelial cytoskeleton, L753

endotoxin-induced, effects on cGMPmediated pulmonary vasorelaxation, L1029

from intestinal ischemia-reperfusion, role of phospholipase  $A_2$  and effects of quinacrine, G397

ischemia-reperfusion, effects of α-adenosine receptor antagonists, L1036 microvessel endothelial cells, hypoxia-

stimulated capillary network formation, L789

neuropeptide receptor distribution, L584

neutrophil-mediated

and nucleotide-stimulated leukocyte adherence to pulmonary artery endothelial cells, L666

pentoxifylline protection mechanisms, 1.27

oxidant-induced, surfactant protein Acarrying, pH-sensitive liposomes for antioxidant delivery to type II cells, L374

oxygen-induced

basic fibroblast growth factor and its receptor, gene expression in lung after 85% O2, L455

effects on type I collagen, transforming growth factor-β1, and related genes, L78

induction of A- and D-type cyclins and cyclin-dependent kinases during recovery, L625

response to, interleukin-8 and monocyte chemoattractant protein-1 mRNA expression, L826

survival time response to 100% oxygen, effects of aging on, L539

moke-induced emphysema, role of collagen breakdown and repair, L17

Luteinizing hormone

postcastration increase, and gonadotropin-releasing hormone levels in pituitary after orchidectomy in rat.

and secretogranin II release from adenohyophysial gonadotrope cells, E145

kinetics, effects of exercise plus β-adrenergic blockade, E910

Lymph nodes

serotonin-induced NO-dependent relaxation, H2246

Lymphocytes

see also T cells intestinal intraepithelial prolactin and prolactin receptor transcript expression in, G431

transport by placental microvillous membrane vs. basal membrane, C755

Lysophosphatidic acid

effects on cerebral circulation, H2048

Lysophosphatidylcholine

role in ventricular arrhythmias during myocardial ischemia, H1740

Lysosomal proteases

cathepsin L

role in intrinsic factor degradation, G33

Lysosomes hepatic

uptake and transport of organic cations, G480

M

α<sub>2</sub>-Macroglobulin

and cytokine-binding proteins in lung (review), L869

gene expression during hibernation in ground squirrel, and acute phase response, R1507

Macrophage chemoattractant and activating factor, see Monocyte chemoattractant protein-1

Macrophage inflammatory proteins MIP-1α and MIP-1β, expression by pulmonary stromal cell populations, L856

Macrophages

L

chemokine mRNA expression in oxygen-injured lung, L826

cytoplasmic motility in parainfluenza type I (Sendai) pneumonia, role of NO, L399

effects of surfactant protein A and bacterial endotoxin, alone and combined, L144

role in clearance of surfactant, L772 tannin-mediated arachidonic acid release from, role of calcium influx. L33

alveolar vs. peritoneal, cyclooxygenase isoforms in, L294

J774A.1 murine cells, intracellular pH

regulation mechanisms, C210 migrating, measurement of locomotive force generation, C1308

nitric oxide effects on glucose metabolism and glyceraldehyde-3-phosphate dehydrogenase, C669

of respiratory tract, neuropeptide receptor distribution, L584

role in clearance of surfactant protein B from lung, L636

role in endotoxin-induced transient hypothermia, R989

Magnesium

see also Adenosine 5'-triphosphatemagnesium chloride

dietary deficiency, mechanisms of effects on glucose metabolism, E925

extracellular, effects on action potential duration and membrane currents in ventricular myocytes, H2321

Magnesium adenosine 5'-diphosphate effects on muscle force and shortening velocity, C480

Major histocompatibility complex class II

IFN-y-induced expression, roles of protein kinase C and tyrosine kinase, C127

Males, see Gender differences Malic enzyme

rate of chemical flux catalyzed by, method for estimating, E397

Malnutrition

see also Dietary deficiencies effects on glucose homeostasis, roles of insulin vs. glucagon, E873

Manganese

transport into cells, tracking with fluorescent probe, C1354

Manganese superoxide dismutase mitochondrial, effects of chronic hypertension, H1418

Mannitol

alone or with hypertonic saline, effects on hypothalamoneurohypophysial activity in rat, R651

blood-nerve barrier permeability to, effects of hyperglycemia, H740

mesotocin and vasopressin secretion by brushtail possum marsupial, effects of stressors on, R1319

vasoconstrictor effects on oxygen, lactate, and glycerol metabolism in bettong skeletal muscle, R1217

Mast cells

degranulation

and altered blood-nerve barrier permeability, H740

from NO synthase inhibition by endogenous NG, NG'-dimethyl-L-arginine, H2224

in postcapillary venules, effects of oxidized LDLs and modulation by NO. H1643

gastric mucosal

ontogeny of degranulation and relation to mucosal permeability, G121 and ileal circular muscle response to

substance P, G161

modulation by ozone exposure, L902 **Maternal separation** 

effects on neonatal stress responses and adrenal sensitivity to ACTH, R1281

Matrix, see Extracellular matrix Maturation

see also Aging; Lung, development age-related changes in atrial myocyte

transient outward and inward rectifier currents, H1335

of bile acid metabolism, triiodothyronine effects on, E889

cardiomyocyte Na+/Ca2+ exchange in newborn vs. adult rabbits, role in contraction, H1723

in rabbits and guinea pigs, relation to sarcoplasmic reticulum maturity, H1714

cardiomyocyte sarcolemmal localization of Na+/Ca2+ exchanger in immature and adult rabbits, C1126

of cardiopulmonary baroreflex control of renal sympathetic response to volume expansion, H1343

of carotid chemoreceptors, glomus cell [Ca2+]; response to hypoxia, developmental changes, L801

cerebral protein synthesis rates and recycling of leucine, age-related changes, R549

developmental changes in epicardial action potential configuration and transient outward current, H2513 effects on insulin- vs. contraction-stimu-

lated glucose transport, E1154 embryonic coronary neovascularization, role of thyroid hormones, H811

glomerular, tight junction formation, tyrosine phosphorylation of protein ZO-1, F514

growth hormone profiles in, neonatal phenobarbital-induced changes and effects on monooxygenase regulation, E439

heart rate developmental patterns, H56 intestinal

glucocorticoid-accelerated: normal or deviant pathway?, G139 peptide YY trophic actions and ontog-

eny of gene expression, G71 mechanisms of contraction signaling in

atrial myocytes, effects of age on, H1195 metanephric apoptosis and kidney mal-

development in bcl-2-deficient mice,

mitochondrial oxidative enzymes in newborn proximal convoluted tubule, developmental regulation by thyroid hormones, F634

nitric oxide synthase and renin ontogeny in juxtaglomerular apparatus,

ontogeny of gastric mast cell degranulation and relation to mucosal permeability, G121

#### Maturation (continued)

of renal cortical Na+/H+ exchanger in newborn, effects of prenatal cortisol on, F710

of renal parenchyma, sites of vascular endothelial growth factor and its receptors in fetal and adult kidney,

small intestine crypt-villus axis organization and stem cell hierarchy during development in mouse, G813

sodium/hydrogen exchangers NHE1 and NHE3, ontogeny in renal cortex and effects of glucocorticoids, F815

tracheal gap junction changes in distribution with postnatal development,

troponin C isoform switching, and differential myofilament pH sensitivity, C323

#### McArdle's disease

mechanism of skeletal muscle contracture, C317

#### mCAT-1

and system y+ transport of arginine by Caco-2 cells, changes with differentiation, G578

Mean circulatory filling pressure measurements in fish and effects of ACE inhibitor, H1814

# Mechanoreceptors

cardiopulmonary

immaturity in fetus, and responses to carotid occlusion, R343

loading magnitudes during graded head-down tilt, R1289

#### Mechanotransduction

endothelial cell response to shear stress, subcellular analysis of flow forces,

in strain-induced fetal lung cell proliferation, L729

#### Melatonin

endogenous nocturnal production rates and pharmacokinetics of exogenous doses in pony mares, R1236

plasma levels and circadian rhythms in rat, effects

of continuous light, R1111 and reentraiment of human circadian rhythms, R528

#### Membrane currents

current-voltage relations in ventricular myocytes, palmitoyl-L-carnitine effects on, H1027

in pancreatic β-cells, effects of hypoglycemic agent A-4166 on, E185

#### Membrane phospholipids

of sarcolemma, role of physicochemical properties in ischemia-induced damage, H773

#### Membrane potential

depolarization, in arterial smooth muscle excitation-contraction, H74 potassium channels in arterial smooth

muscle (review), C799 relation to basolateral tetraethylammo-

nium transport in snake proximal tubule, R1539

teaching demonstration in living Xenopus laevis oocyte, S26

#### Membrane proteins

problems with cell surface biotinylation protocol, F285

#### Membrane transport, see Transport Membranes

see also Permeability

of renal epithelial cells, GTP hydrolysis by, aldosterone effects on, C557 in T84 epithelial cells, ATP-activated

ion conductance and signal transduction pathways, C425

apical and basolateral, dual endocytosis of β2-microglobulin in proximal tubule cells, with endosomal convergence, F829

basolateral, and neutrophil migration across T84 epithelial cells, C472

basolateral plasma, in hepatocytes, prolactin effects on sodium-taurocholate cotransport, G11

#### brush-border

intestinal, differential sensitivity of inner and outer leaflets to oxidative damage, G260

of proximal tubule, sodium-phosphate cotransport, defects in murine Xlinked hypophosphatemia (review),

renal Na-P; cotransporter, dietary phosphate-regulated, cloned sequence in rabbit, F626

renal Na-P; cotransporter, parathyroid effects on, F784

renal, proline transport across, role of protein kinases, F155

renal, sodium-potassium cotransporter in X-linked Hyp mice with dietary Pi restriction, F1062

in small intestine, ecto-ATPase in, G663

vesicular transport of glucose in enterocytes, polyamine effects on, G416

changes in sickle cells, role in impaired filterability, H2003

#### channels, see Cation channels; Ion channels; and specific ion

excitability, changes in, in ventricular muscle cells, role of inward rectifier, model study, H1181

integral proteins, multifunctional trans-porter models: lessons from GLUTs (review), C1077

interaction with cytoskeleton, and tracheal smooth muscle contraction, C563

localization of sodium/hydrogen exchangers, C283

osmotic flow and pressure, laboratory for teaching, S10

permeability parameters, measuring in skeletal muscle capillaries, H184

permeability to ammonia, study by saturation transfer nuclear magnetic resonance, C686

placental microvillous, lysine transport and y+ system comparison with basal membrane, C755

plasma, in inner medullary collecting duct adaptation to dehydration, F53 polarity, problems with cell surface bio-

tinylation protocol, F285 water transport across, role of hydrostatic pressure (August Krogh lecture), R1087

#### Memory

and dehydroepiandrosterone effects on sleep, E107

#### Menadione

in bronchial epithelial cells, effects of prior cytokine-induced superoxide dismutase, L71

DNA damage and cytotoxicity from H<sub>2</sub>O<sub>2</sub> production, protection by α-ketoacids, C227

#### Merosin

role in enterocytic differentiation, G857

### Mesangial cells

vasorelaxation in, role of cGMP effects on phospholipids and PKC, C376

#### Mesenchymal cells

platelet-derived growth factor isoformspecific induction of low-density lipoprotein receptor gene, C1033

## Mesenteric artery

blood flow in rat, assessment of transittime ultrasound 1- and 2-mm probes, H1368

#### Mesenteric organs

catecholamine production and metabolism, vs. liver and kidney, G641 hepatomesenteric release and removal of norepinephrine, R924

# Mesentery

histamine-induced leakage sites, and endothelial actin cytoskeleton changes, H316

vascular reactivity to vasopressin, in male vs. female normotensive vs. DOCA rats, R40

venules, leukocyte-endothelial cell adhesion, induction by oxidized chylomicrons, mechanisms, H2175

#### Mesonephros

expression of vascular endothelial growth factor and its receptors, F240

# Mesothelial cells

mechanisms of cytosolic Ca2+ mobilization, L63

pleural, DNA injury and repair after H2O2 exposure, vs. tracheal epithelial cells, L832

secretion by brushtail possum marsupial, effects of stressors on, R1319

# Metabolic alkalosis

renal, and hyperparathyroidism from sustained intravenous neutral phosphate loading, F802

Metabolic compartmentation in carotid artery smooth muscle, C628

# Metabolic depression

and antioxidant defenses, in land snail, R1386

# Metabolic inhibition

see also Energy depletion

in cardiomyocytes, sodium and calcium intracellular levels and cell morphology during metabolic inhibition, H1239

effects on [Ca2+]i, vs. anoxia, reoxygenation, and hypoxia, H1045

#### Metabolic rate

aging effects on, E1083

and allometry of muscle relaxant pharmacokinetics and pharmacodynamics in mammals, R85 cortisol effects on, E501

- relation to body mass, allometry in mouse, rat, rabbit, sheep, and cattle liver and kidney, R641
- serotonin receptor subtypes involved in regulation, R14

#### Metabolic substrates

effects on cardiac redox and phosphates, H82

#### Metabolism

- in Bedouin goat, adaptations for desert survival and reduced food intake, R1101
- during recovery from exercise, relation to cardiovascular system and exercise cost, H2311
- oxidative and carbohydrate, in hypoxic fetus, placenta, and uterus, R303
- oxidative vs. glycolytic, and compartmentation, in vascular smooth muscle, C628
- relation to food intake and diet composition in parabiotic partner of obese rat, R874
- [13C]bicarbonate infusion for measuring CO<sub>2</sub> production, E1123
- ultradian and circadian oscillations in various endotherms, R253

#### Metaboreflex

- of skeletal muscle, role in restoring blood flow to ischemic active muscle, H980
- Metabotropic glutamate receptors metabolic, hormonal, and hemodynamic effects, R1026
- Metalloproteinase tissue inhibitor pulmonary, expression in lung, effects of 85% O<sub>2</sub>, L78

## Metallothioneins

enhanced renal and hepatic synthesis after uninephrectomy and compensatory renal growth, F643

#### Metals

- role in regulation of angiogenic growth factor, C1362
- transport into cells, tracking with fluorescent probe, C1354

#### Metamorphosis, see Differentiation Metanephros

expression of vascular endothelial growth factor and its receptors, F240

#### Met-enkephalin

production in cholestatic liver, G346

# Met<sup>5</sup>enkephalin

modulation of corneal epithelial outgrowth, R942

# Methemoglobin

and iron-derived reactive oxygen species in pulmonary vascular disorders, L321

### Methionine

and peroxynitrite chemistry, L699
Methodologies

- adenovirus-mediated gene transfer to cultured fetal lung, with *lacZ* reporter gene, L839
- adjusting for body surface area in hemodynamics studies, superiority of regression over indexing, R978
- analysis of lithium in renal tubular fluid (letter), F1229
- for assessing left ventricle dynamic regional longitudinal curvature,

- best myocardial strain indexes for mapping ischemic regions using tagged MRI in 3-D, H1918
- calcein fluorescent probe to track metal transport into cells, C1354
- calorimetry in thermoregulation studies, R838
- cardiomyocyte culture
- changes in electrophysiology, C1002 changes in sodium current, C993
- for cell differentiation studies, Moluccella laevis lectin as marker, G553
- cell surface biotinylation protocol, problems in membrane polarity studies, F285
- conductance catheter measurement of left ventricular volume, gain factor variability within cardiac cycle, H1490
- for continuous drug infusion into renal artery of rat in vivo, F967
- culture of airway smooth muscle cells,
- Cytosensor Microphysiometer for measuring extracellular acidification changes, C936
- defibrillation threshold determination, potential gradient field for shocks during fibrillation vs. paced rhythm, H2336
- for determining cardiac baroreflex sensitivity, statistical dependence method, R382
- for determining speed of left ventricular relaxation, H170
- dialysis effects on autonomic regulation of CFTR Cl<sup>-</sup> current in cardiomyocytes, H1795
- doubly labeled water analyses, deuterium isotope ratios, least-squares curve fitting of NMR data, £1018
- [D-Tyr-Gly]A-71378, highly selective cholecystokinin A receptor ligand, G605
- echocardiography, mathematical model for transmitral and pulmonary venous flow, H476
- electrical skeletal muscle stimulator with adjustable duty cycles, use in rabbit and rat, H1373
- electrogastrography, relation to gastric and pyloric motor activity, G424
- endothelial cell culture on gelatin vs. Matrigel, effects on morphology and gene expression, H1613
- for estimating flow rates during retrograde and anterograde cardioplegia, myocardial contrast echocardiography, H1555
- for estimating glomerular pressure, errors in using macromolecule sieving data, F736
- for estimating in vivo glucose transport in small animals, tracer technique, E712
- for estimating total arterial compliance, analysis of seven methods based on windkessel models, H1540
- for evaluation of muscarinic acetylcholine receptor in humans, (S)-3-quinuclidinyl-(S)-4-[<sup>123</sup>I]iodobenzilate, R1491
- for examining shear stress effect on hydraulic conductivity in endothelial monolayers, H535

- fractal analysis, for regional blood flow determinations, H112
- for gene transfer, adenovirus and plasmids as vectors, G1074
- for genotyping rats segregating fatty (fa) gene, molecular genetics method, E15
- hepatic indicator dilution curves, effects of intralobular zonal variation on rate constants, G189
- high-frequency ultrasound
- pulsed Doppler, for cardiovascular studies in mice, H499
- for study of brachial artery flow-mediated vasoactivity, H1397
- hindlimb perfusion
  - effects on gene expression in skeletal muscle, E866
  - vs. isolated incubated muscle, local vasomodulation effects on metabolism (review), E797
- for in vivo study of human arterial mechanics, echo tracking and photoplethysmography, H794
- for increasing hepatocyte growth factor/ scatter factor plasma levels on intraperitoneal infusion, G380
- for inducing heart failure, use of Ca<sup>2+</sup>free, then high-Ca<sup>2+</sup>, perfusion,
  H1061
- intracardiac flow and velocity studies, use of phase-contrast cine MRI, H1232
- for intracellular antioxidant delivery, pH-sensitive liposomes with surfactant protein A, L374
- intracellular free calcium measurements, C271
- isolation and perfusion of rat mesenteric window, for agonist-induced microvascular leakage studies, H316
- lactate and pyruvate plasma and tissue isotopic enrichment values, problems with use, E880
- laser-Doppler flowmetry: estimation of flux biological zero, H213
- left ventricular filling index, normal spatial inhomogeneity of mitral transannular flow velocities, H1232
- leukocyte rolling in mesenteric postcapillary venules, subtype differentiation in vivo, H909
- lithium clearance, use of endogenous vs. exogenous lithium and effects of dietary sodium levels, F718
- for longitudinal study of microcirculation in hypertension, H33
- for long-term study of colonic motility in unrestrained ambulatory dogs, G650
- magnetic resonance tissue tagging for 3-D imaging of motion and deformation of transmural infarcts, H1304
- for marker of lung injury, alveolar epithelial type I cell protein rTI<sub>40</sub>, L181 mean circulatory filling pressure mea-
- surement in fish, H1814 for measuring airway luminal area changes, computerized videomi-
- crometry of microexplants, L519 for measuring carbohydrate oxidation, respiratory calorimetry vs. isotopic
- tracers, E789 for measuring CO<sub>2</sub> production, [<sup>13</sup>C]bicarbonate infusion, E1123

# Methodologies (continued)

for measuring endometrial vs. myometrial blood flow in small animals, H<sub>2</sub> gas clearance, R569

for measuring gestational energy costs and body composition, new hydration constant for body density and body water, E153

for measuring locomotive force produced by moving leukocyte, C1308

for measuring muscle amino acid transmembrane exchange and intracellular metabolism, E75

for measuring myocardial thickness, ultrasonic single-crystal sonomicrometer, H1358

for measuring oxygen level in single cardiomyocyte, spectrophotometry plus digital image processing, H2561

for measuring protein synthesis rate in vivo, flooding method with minimal precursor pool activity assumptions, E735

for measuring rate of chemical flux through citric acid cycle in heart, E397

for measuring renal function, drawbacks of constant-infusion technique, F543

for measuring small-animal renal blood flow, miniature ultrasonic transittime flow probes, F175

for measuring whole body protein synthesis,  $^{13}\text{CO}_2$  vs. plasma precursor techniques, E174

for metabolic studies, tissue slices vs. isolated cell preparations, R641

modified confocal imaging, for detecting peripheral vs. inner [Ca<sup>2+</sup>]<sub>i</sub> levels, C771

nitrogen balance vs. whole body amino acid kinetics, E668

nonlinear chaotic dynamics techniques, use for cardiovascular research, H621

for obtaining normal human ventricular myocytes from biopsies, for electrophysiological studies, H1757

potassium channel inhibitors and openers, C799

proximal tubule cell cultures, glucose metabolism, effects of glucose, lactate, and oxygen levels in medium, C1053

for quantifying oxidative injury in liver, G471

quantitating rough endoplasmic reticulum, C308

for reconciling inconsistent results in electromagnetic field studies, chaos theory, R1013

for renal sieving coefficients and fractional clearance, heterogeneous vs. conventional capillary network model, F972

reverse hemolytic plaque assay plus immunocytochemistry and in situ hybridization, for ANP-secreting cell analysis, H265

for separating myosin heavy chain isoforms in skeletal muscle, C419

for simultaneous study of chemoattraction and bronchoconstriction, guinea pig tracheal explants, L446 for solubilizing hepatic microsomal pancreatic polypeptide receptors, G215

spectral analysis of systemic arterial pressure signals, H2329

for studies of food intake metabolic control, 2,5-anhydro-D-mannitol, R299

for study of autonomic heart rate control, autoregressive moving average analysis. H2232

for study of lipid peroxidation in cell injury, lazaroid compounds, F30

for study of membrane permeability to ammonia, saturation transfer nuclear magnetic resonance, C686

for study of muscle metabolism, vasoconstrictor effects in perfused vs. incubated preparations (review), E797

for study of pancreatic β-cell function, use of C-peptide kinetics, E21

for study of small precapillary arteries, pressurized vs. wire-mounted techniques, H670

for studying gastrointestinal bolus transport, multiple intraluminal impedance measurements, G700

for studying muscarinic receptors, subtype specific antibodies and immunoprecipitation, L101

for studying P<sub>i</sub> transport and metabolism, <sup>31</sup>P-NMR probe-perifusion system, F375

<sup>23</sup>Na-NMR and microcalorimetry for endothelial Na<sup>+</sup>-K<sup>+</sup>-ATPase energetics study, H351

surrogate data and spectral analysis of spontaneous baroreflex relationship, H1682, H1688

transit-time ultrasound 1- and 2-mm probes, validation and calibration in rat mesenteric artery and aorta, H1368

use of pulse-synchronous changes in neck chamber pressure to assess baroreflex sensitivity, H1208

for viewing intracellular Ca<sup>+</sup> compartments, digital fluorescence imaging microscopy, C503

in vitro human airway epithelial cell culture systems (review), L347

### Methyl sulfate ion

and chloride-dependent, osmolalityinduced changes in aldosterone secretion, R8

N-Methyl-D-aspartate

intracerebral injection, neural control of glucose uptake, R492

N-Methyl-D-aspartate receptors

activation, effects on cardiac intrinsic nervous system, R403

# 3-O-Methylglucose

insulin effects on transport and extracellular distribution, E712

#### Metocurine

effects of body size on mammalian pharmacokinetics and pharmacodynamics, R85

# Microfilaments

in pancreatic acinar cells, effects of supramaximal secretagogue stimulation, G328 β<sub>2</sub>-Microglobulin

effects on food intake, R1513

endocytosis in proximal tubule cells, endosomal convergence of apical and basolateral pathways, F829

#### Microsomes

hepatic monooxygenases and effects of neonatal phenobarbital on growth hormone secretory patterns, E439 menadione-induced  $\rm H_2O_2$ ,  $\alpha$ -ketoacids as

scavengers, C227

#### Microtubules

disruption in vascular smooth muscle cells, stimulation of system A transport. C1512

in pancreatic acinar cells, effects of supramaximal secretagogue stimulation. G328

#### Microvasculature

see also Arterioles; Capillaries; Permeability; and specific sites

adaptation to arterial insufficiency and effect of exercise training, H125

changes during development of hypertension, H33

effects on mesotocin and vasopressin secretion by brushtail possum marsupial, R1319

flow dynamics of erythrocytes, effects of erythrocyte aggregation, H1959

gap junctional connexin proteins in arteriolar smooth muscle and endothelium, H729

hemodynamics, and oxygen delivery to tissues, H802

high-permeability endothelium, LDL transport across, solvent drag and sieving, H1982

inflammatory, elastase and IL-1β secretion from, effects of aging and dietary fish oils, R208

isolated, as models for studying neutrophil-endothelial dynamics, H490 leukocyte rolling in, subtypes involved,

in vivo differentiation, H909 mental, adrenal and cardiovascular re-

sponses to, effects of aging and depression on, R865 osmotic, effects on colonic motility in

fowl, R690

responses in newborn, effects of sympathectomy and maternal separation, R1281

role of protein synthesis in endotheliumdependent dilation after injury, H512

skeletal muscle, geometric responses to changes in muscle length, H336

cerebral, Na-K-Cl cotransport in endothelial cells, astrocyte effects on, C747

gastric, angiogenesis from basic fibroblast growth factor, timing of ulcer healing effects, G276

hepatic

circulatory status and transport function, effects of reactive oxygen species. G47

vasoconstriction from galactosamine and endotoxin, role of endothelin-1, G997

permeability

from thromboxane A<sub>2</sub> receptor activation, R366 substance P-increased, role of nitric oxide and neurokinin receptors, R1060

pulmonary

endothelial cells, hypoxia-stimulated capillary network formation, L789 neutrophil-mediaed injury, pentoxifylline protection mechanisms, L27 renal

autoregulation in, interaction with cGMP-dependent dilators, F338 blood flow changes from myoglobin

and hemorrhagic hypotension, role in myoglobin nephrotoxicity, F839 dietary protein level and effects of angiotensin II. F302

distribution of constitutive NO synthase isoforms in various mammal species, F885

Middle cerebral artery

inducible nitric oxide synthase role in ischemic brain damage, R286

Mifepristone

effects on dexamethasone-induced rise in pulmonary  $\beta_2$ -adrenoceptor transcription rate, L41

Migrating myoelectric (motor, motility) complexes

colonic

relation to propulsion, G530 in unrestrained ambulatory dogs, 24hour study, G650

conversion to postprandial electrical pattern, role of NO, G207

duodenal, during chyme transport, G700 interdigestive, regulatory role of duodenal pH, G146

Migration inhibitory factor-related proteins

MRP8 and MRP14, presence in pancreatic cell lines, C1241

Mineral dusts

hydroxyl radicals from, and DNA strand breaks in epithelial lung cells, L471

Mineral homeostasis

in osteopetrotic rat, E312
Mineralocorticoid receptors

and NAD-dependent 11β-hydroxysteroid dehydrogenase in colonic epithelial cells, C1467

Mineralocorticoids

role in bicarbonate absorption in loop of Henle, F234

Mitochondria

cytokine-induced superoxide dismutase in bronchial epithelial cells, effects on later oxidant exposure, L71

fatty acid oxidation, exercise effects on muscle carnitine palmitoyltransferase II mRNA, E277

hepatic, estrogen and progesterone effects on: role in acute fatty liver of pregnancy, G107

hypoxic inhibition of cytochrome-c oxidase, L918

lipid peroxidation and manganese superoxide dismutase, effects of chronic hypertension, H1418

menadione-induced  $H_2O_2$ ,  $\alpha$ -ketoacids as scavengers, C227

permeability transition, role in hepatocyte death by anoxia or electron transport inhibition, C676

redox state, myocardial, effect of substrates on, H82 renal

oxidative enzymes in newborn proximal convoluted tubule, developmental regulation by thyroid hormones, F634

postischemic ATP production in, thyroxin effects on, F651

sodium/hydrogen antiport, C1227 in small intestine enterocytes, respiration rates after graded ischemia, G116

Mitogen-activated protein kinase

and lipoxygenase inhibitor effects on platelet-derived growth factor-induced mitogenesis, C604

role in tracheal smooth muscle mitogenesis. L894

#### Mitogen-activated protein kinase kinase

activation by pancreatic acinar cholecystokinin, G1060

Mitogenesis

from platelet-derived growth factor, effects of lipoxygenase inhibitors, C604

thrombin-induced, in vascular smooth muscle cells, delayed kinetics, C1141

in tracheal smooth muscle, role of mitogen-activated protein kinase, L894

MK-329 (cholecystokinin antagonist) effects on volume and rhythm of pancreatic enzyme secretions, G251

Modeling in physiology

analysis of possible mechanisms for in vitro oscillations of insulin secretion, C780

blood pressure and heart rate oscillations in sleep apnea, chemoreflex model, H2145

cardiac quick-release contraction mechanoenergetics, analysis with crossbridge muscle model, H2544

β-cell glucose metabolism and insulin release, glucokinase as glucosensor, E775

feedback and feedforward control of coronary blood flow, H895

glomerular size selectivity, heterogeneous vs. conventional capillary network model, F972

instantaneous and steady-state gains in tubuloglomerular feedback, F163

intercellular calcium waves mediated by inositol trisphosphate diffusion, two-dimensional model, C1537

mathematical model for transmitral and pulmonary venous flow, H476

pressure-area relations of coronary blood vessels within cardiac muscle in diastole and systole, H2531

shear stress on flow-aligned and nonaligned endothelial cell monolayers, subcellular analysis, H1765

simulation model for glucose kinetics and estimated glucose utilization rate in diabetics, E766

Models

AKR/J and SWR/J mouse strains, roles of diet components vs. genetics in obesity, R658

for angiogenesis, calf lung microvessel endothelial cell cultures, L789

Aplysia intestine, for studying enterocyte Na<sup>+</sup> absorption and K<sup>+</sup> conductance, R1050 capillaries of frog mesentery, seasonal variations in hydraulic conductivity and volume status, R468

computer

of current-induced early afterdepolarizations in guinea pig ventricular myocytes, H2440

of systemic arterial tree, seven methods for estimating total arterial compliance, H1540

for congenital cyanotic heart disease, H1165

cultured airway myocytes for airway smooth muscle studies (review), L1 cystic fibrosis mouse, bioelectric fea-

tures, vs. humans, C297

Dahl salt-sensitive rats, defective dopamine-1 receptor-adenylate cyclase coupling in proximal tubule, R231

for embolic pulmonary hypertension, Starling resistor vs. distensible vessel. H817

for embryonic death associated with anomalous heart rate, H56

endothelial cell culture on gelatin vs. Matrigel, effects on morphology and gene expression, H1613

for gastrointestinal ion transport in cystic fibrosis, CF mice with disrupted CFTR gene, G505

genetically diabetic Otsuka Long-Evans Tokushima Fatty rat with cholecystokinin insensitivity, E531

for heart failure

rapid ventricular pacing in minipigs, effects on ventricular subendocardial function, H1788

use of Ca<sup>2+</sup>-free, then high-Ca<sup>2+</sup>, perfusion, H1061

for hypertension, ren-2 transgenic rats [TGR(mRen2)27], angiotensin II dependence of tubuloglomerular feedback, F821

J774 murine macrophage cells, intracellular pH regulation mechanisms, C210 leech dorsal skin for study of inverte-

brate epithelial Na<sup>+</sup> transport, R605 for left ventricular performance, with integrated myocardial mechanics, coronary flow, and interstitial transport. H633

Madin-Darby canine kidney cells, H<sup>+</sup> gradient-dependent, calmodulinregulated peptide transport system, F391

maternal hyposmolality models for study of maternal-fetal fluid transfer in oligohydramnios, R358 mathematical

changes in excitability of ventricular muscle cells: inhibition, facilitation, hysteresis, H1181

of oxygen transport: teaching aid adaptable to extracorporeal oxygenation, S32

of renal inner medulla concentrating mechanism, effect of vasa recta flow, F698

of renal inner medulla concentrating mechanism, F680, F693

for skeletal muscle capillary permeability, H184

mice, for cardiovascular studies, utility of high-frequency pulsed Doppler ultrasound, H499

#### Models (continued)

for multifunctional transporters: lessons from GLUTs (review), C1077

obese Zucker rat, adipocyte A1 adenosine receptors, hyperactivity and phosphorylation-regulated coupling, E693

for pancreatic A cells, hamster glucagonoma cells, somatostatin effects

rat hindlimb perfusion, effects on gene expression in skeletal muscle, E866

for renal compensatory growth, hypertrophy vs. hyperplasia after unilateral vs. subtotal nephrectomy, F793

for renal hypoplastic disease, bcl-2-deficient mouse, F73

for renal proximal tubule, temperaturesensitive SV40-immortalized cell line, F435

for sickle cell disease, mouse erythrocytes, cation transport and regulatory volume decrease, C894

streptozotocin-induced diabetes, effects of brain serotonin depletion, E839

for study of electrogenic Na+ and Cltransport in inner medullary collecting duct, cell line mIMCD-K2, F347

for study of human 15-lipoxygenase activity, interleukin-4-treated monocytes, C1301

for study of mesangial cell differential gene expression, transcriptional regulation of smooth muscle α-actin promoter, F760

for study of renal D<sub>1A</sub> dopamine receptor gene, LLC-PK1 cells, F423

for studying arginine transport in epithelial cells, system y+ regulation in differentiating Caco-2 cells, G578

for studying atrial natriuretic peptide secretion, small cell lung cancer cell lines, H1869

for studying CHF with unhypertrophied ventricles, use of monocrotaline, H391

for studying differentiation of Na transport, larval bullfrog skin cultured in vitro, C218

for studying effects of aging on vasculature, beagle hindlimb vessels, H92

for studying endothelial cell responses to hypoxia and reoxygenation, H749

for studying myocardial metabolism, nonworking abdominal heterograft heart, E48

for studying neutrophil-endothelial dynamics in isolated microvessels,

for studying phosphoenolpyruvate carboxykinase isoforms, gluconeogenic substrains of renal epithelial cell lines, C449

for studying physiologic basis of genetic dominance, E15

Wistar and spontaneously hypertensive rats, insular cortex-mediated autonomic responses, R214

### Moluccella laevis lectin

use as marker in cell differentiation studies, G553

#### Monoclonal antibodies

to complement component C5a, effect on myocardial ischemia-reperfusion injury, H448

#### Monocrotaline

for study of CHF with unhypertrophied ventricles, H391

Monocyte chemoattractant protein 1 (monocyte chemotaxis and activating factor)

inhibition of vascular smooth muscle cell proliferation, H1021

mRNA expression in alveolar macrophages in oxygen-injured lung, L826

Monocytes 1α-hydroxylase, and 1α,25-(OH)<sub>2</sub>D<sub>3</sub> defi-

#### ciency in uremia, F746 5'-Monodeiodinase

tissue type I: liver, kidney, and thyroid levels in selenium deficiency, E572

NG-Monomethyl-L-arginine

effects on endotoxin-induced vascular hyporeactivity to phenylephrine,

effects on nitric oxide suppression of hepatocyte glucose and urea production, G183

#### Mononuclear cells

age-related changes, effects of dietary fish oils, R208

transcription factor activation in, effects of glucocorticoids on, C331

#### Monooxygenases

hepatic, and effects of neonatal phenobarbital on growth hormone secretory patterns, E439

#### Morphine

effects on saline-induced proximal colonic tone, G95

stimulation of prolactin and growth hormone secretion, ambient temperature effects, E758

### Morphogenesis

small intestine, crypt-villus axis organization and stem cell hierarchy in mouse, G813

## Morpholine compounds

BRL-47672, effects on skeletal muscle growth and β<sub>2</sub>-adrenoceptors, E159

plasma levels and duodenal pH effects on interdigestive migrating myoelectric complex, G146

### Motion sickness

gastric slow wave dysrhythmia from, role of cholinergic and α-adrenergic pathways, G539

#### Motoneurons

role in regulating muscle fiber biochemical and morphological properties,

of vagal dorsal motor nucleus, effects of serotonin alone and with thyrotropin-releasing hormone, G292

from self-reinnervated muscle, myosin heavy chain, succinate dehydroge nase, and cross-sectional area, C527

swallowing in cat, videofluoroscopy and electromyography, G232

#### Mucin

gastric, secretion, prolactin effects on, G431

pancreatic secretion, and regulation of goblet cell degranulation, G24

### Multiple organ failure

zymosan-induced, role of tumor necrosis factor, E219

#### Multispecific organic anion transporter

and bile acid facilitation of protoporphyrin excretion, G754

#### Murocholic acid

effects on hepatocellular cAMP formation, G300

#### Muscarinic agonists

cardiac, tetramethylammonium, C1414

#### Muscarinic cholinergic receptors in regulation of pancreatic goblet cell

degranulation, G24

# Muscarinic mechanisms

role in glucose homeostasis after hyperglycemia, R475

#### Muscarinic pathways

role in gastroprotective effect of raphe pallidus kainic acid, G548

#### **Muscarinic receptors**

in brain and salivary gland, kinetic analysis, R1491

cholinergic, role in nasal gland acinar cell [Ca2+]; signaling, L361

### $M_2$

and airway smooth muscle contraction, role of G proteins and calciumactivated K channels, L221 increased expression in Basenji-grey-

hound dog, L935 M<sub>3</sub> and M<sub>1</sub> subtypes, presence in rat pancreatic islets, E336

M<sub>3</sub>, suppression of ATP-sensitive K<sup>+</sup> channel in esophageal smooth muscle, C877

on sympathetic neurons, role in regulating [Ca2+], C829

pHi changes induced by, in naive vs. fully differentiated avian salt gland cells, C944

role in phospholipase D activation in lacrimal gland acini, C713

roles in acetylcholine potentiation of acetylcholine-induced K+ currents in atrial myocytes, H1322

and site of Met-enkephalin-Arg-Phe effects on vagal control of heart rate. H848

subtype distribution in trachea, bronchi, and lung, L101

subtypes in brain stem respiratory nuclei, L941

# Muscarinic responses

of CFTR Cl-current in cardiomyocytes, dialysis effects on, H1795 Muscarinic synapses

role in histamine H2 receptor-induced colonic secretion, G465

#### Muscle, heart

see also Cardiomyocytes; Heart, contractility; Myocardium

cardiomyocyte Na+/Ca2+ exchange, role in contraction, in newborn vs. adult rabbits, H1723

### contraction

effects on pressure-area relations of vascular segments within the muscle, model for, H2531

energy saved by quick release at peak contraction, analysis with crossbridge muscle model, H2544

role of calcium current-gated Ca<sup>2+</sup> release from sarcoplasmic reticulum, effects of age on, H1195

excitability changes, role of inward rectifier, model study, H1181

papillary

calcium ion regulation in, effects of cardiomyopathy, H1875 perfusion pressure effects on diastolic

stress-strain relations, H945 peptide initiation during head-down tilt, effects of heat-shock protein-70,

C1375 sarcoplasmic reticulum calcium pump, in cardiomyopathic hamster, effects of perindopril, H1947

sarcoplasmic reticulum protein levels in cardiac hypertrophy, role in dysfunction, C252

stretch-induced arrhythmias, role of Ca<sup>2+</sup> and Na<sup>+</sup> influx, H1803

viscoelastic properties of cross bridges, H987

Muscle regulatory factors

MRF4, Myf-5, myogenin, role in skeletal muscle adaptive response to contractile change, C1045

Muscle, skeletal

see also Excitation-contraction coupling

adaptive response to contractile change, role of muscle regulatory factors, C1045

amino acid and protein kinetics after exercise, E514

amino acid transmembrane transport and intracellular metabolism, E75 ammonia and amino acid metabolism in

canine gastrocnemius, R759 arterioles, presence of bradykinin B<sub>2</sub> receptors and response to bradykinin,

H1628 atrophy, effects of polysomal heat-shock protein-70 on polypeptide elongation, C1369

atrophy from glucocorticoids, glutamine effects on, E730

basal and insulin-stimulated glucose transport, Ca<sup>2+</sup> effects on, R997

blood flow, during exercise, effect of hyperthyroidism, H330

bovine fast-twitch myosin light chain 1, gene cloning and muscle levels after clenbuterol, E858

BRL-47672 (morpholine compound) effects on growth and  $\beta_2$ -adrenoceptors, E159

calcium release channels in sarcoplasmic reticulum, activation by cyclic ADPribose and related agents, C1235

capillary permeability to small solutes,

chloroquine effects on glucose and protein turnover, E820

contractile proteins, zero gravity effects on fast and slow isoform mRNAs, C466

contractility, Na $^{+}$  and K $^{+}$  effects, implications for fatigue, C1528

contraction effects on carnitine palmitoyltransferase II mRNA, E277

effects on insulin signaling, E987 contracture, effects on muscle metabolism, C317 determinants of maximal oxygen uptake during single-leg knee extension exercise, H1453

early change in insulin stimulation of phosphatidylinositol 3-kinase in obesity, E604

electrical stimulator with adjustable duty cycles, use in rabbit and rat, H1373

exercise-induced anabolism, effects of added growth hormone in older men, E268

exercise-induced lipoprotein lipase gene expression, E229

fast vs. slow, energy-rich phosphate levels in humans, C869

fatigue, ADP effects on force and shortening velocity, C480

fiber types, relation to obesity and insulin-induced glucose transport, E453 force development, effects of myosin

phosphorylation, C596

forearm power output, relation to Gibbs free energy of ATP hydrolysis, C1474

fractal analysis for regional blood flow determinations, H112

glucose disposal and glycogen synthase activity, role of plasma insulin levels, E1031

glucose transport in, growth hormone effects on and changes with age, E902

glucose transport kinetics, effects of insulin and contractions, C30

glucose uptake after N-methyl-D-aspartate intracerebrally, neural control, R492

glucose uptake and metabolism during hypoglycemia, E248

glycogenolysis during exercise, role of epinephrine, E127

hindlimb perfusion, effects on gene expression, E866

HSP70 levels during exercise and heat stress, R92 immobilization, effects on glucose trans-

immobilization, effects on glucose transport and insulin receptors, E980 insulin-induced glucose transporter

GLUT-4 translocation to plasma membrane, E613

insulin-like effects of peroxyvanadium compounds, E60

insulin-mediated glucose uptake, inhibition by  $\alpha$ -adrenergic vascular effect, E305

intracellular acidosis effects on [Ca<sup>2+</sup>]<sub>i</sub>force relations, C55

intracellular pH after hypercapnia in two lizard species, R889

in kyphoscoliotic mouse, mechanical power and myosin composition, C513

lactate transport, effects of denervation, R884

length changes, effects on microvascular geometry, H336

loading effects on myosin heavy chain isoform composition, C419

malignant hyperthermia-susceptible, altered E-C coupling in triad vesicles, C1381

in marsupial, vasoconstrictor effects on oxygen, lactate, and glycerol metabolism, R1217 maturation effects on insulin-vs. contraction-stimulated glucose transport, E1154

mechanically stimulated growth and protein turnover, E288

metabolic responses to cold, effects of aging and gender, R931

metabolism

control by local vasomodulation (review), E797
effects of local epinephrine infusion,

E55

metaboreflex, role in restoring blood flow to ischemic active skeletal muscle, H980

myocutaneous flap, postischemic neutrophil recruitment and lipoxygenase activation, role of leukotriene B<sub>4</sub>, H2167

myofibrillar protein synthesis, reduction in elderly, effects of resistance training on, E422

myofilament pH sensitivity, and troponin I isoforms, C323

Na<sup>+</sup>-K<sup>+</sup> transport, effects of insulin-like growth factor I, E849

physical training effects on collateral blood flow in peripheral arterial insufficiency, H1174

postischemic no-reflow, effects of ischemic preconditioning and role of ATP-sensitive K channels, H2063

postraumatic catabolism, persistent changes in insulin-like growth factors and IGF binding proteins, R970

potassium conductance expression and modulation during differentiation, C490

prednisone effects on protein metabolism in Duchenne and Becker muscular dystrophy, E67

protein synthesis in, effects of age, nutritional state, and exercise, E328 proteolytic pathways involved in cancer-

associated cachexia, E996
pyruvate dehydrogenase activity and

glucose-fatty acid cycle, effects of acetate infusion and exercise, E1007 responses of glucose catabolism proteins

during exercise training, R130 role in metabolic adaptations to reduced food intake in desert survival, R1101

role in postprandial thermogenesis and oxygen consumption, in men vs. women, E433

sarcoplasmic reticulum calcium pump, in cardiomyopathic hamster, effects of perindopril, H1947

self-reinnervated, biochemical and morphological properties, C527

sepsis-induced catabolism, amrinone effects on, E491

stretch-induced hypertrophy, skeletal  $\alpha$ -actin promoter elements responding, C918

sympathetic nerve activity, responses to graded head-down tilt, R1289

Muscle, smooth

acetylcholine-induced nonselective cation channels, role of H<sup>+</sup>, C162

α-actin promoter, in mesangial cell activation, regulatory CArG box motifs, F760 Muscle, smooth (continued)

α-actin promoter, transcriptional control regions, C1259

colonic

contractility, effects of food proteininduced GI allergy, G764

intercellular communication mechanisms: metabolic coupling, C1492 longitudinal vs. circular, role of Ca<sup>2+</sup>-

activated K<sup>+</sup> channels, C619 tonic responses to eating, nutrients,

and simulated diarrhea, G95 cross-bridge kinetics and force activation, C237

esophageal

ATP-sensitive K<sup>+</sup> channel, muscarinic suppression, C877

nonadrenergic noncholinergic inhibitory junction potentials, roles of NO and K<sup>+</sup> channels, G831

nonadrenergic, noncholinergic relaxation, roles of NO and VIP, G59

transient lower sphincter relaxation, objective criteria for defining, G128 transient outward current, G979

esophagogastric, mechanics of phrenic ampullary emptying, G320

gastric cells, cAMP and cGMP protein kinases in, role in relaxation, C171 gastric, somatostatin receptors, G739 gastrointestinal

colonic contractile patterns and relation to propulsion, G530

nitric oxide effects on, and hemoglobin effects on esophagus, G443

role of nitric oxide in small intestine motor pattern regulation, G207

ileal, inflammatory changes in enteric neural regulation, G823

interdigestive migrating myoelectric complex, regulatory role of duodenal pH, G146

intestinal, changes in colitis, benefits of nitric oxide inhibition, G673

muscarinic-induced contractions, and H<sup>+</sup> regulation of ionic currents, C162

myometrial, effects of estrogens on calcium channels, C64

resting load, regulation of vascular sensitivity, C1332

sex hormone effects on gastric emptying and gastrointestinal transit, G171

tachykinin receptors as mediators of canine ileal motility, G161

uterine, type A endothelin receptors in myometrial cells, E825

Muscle, smooth, airway

acetylcholine release from nerve endings, effects of substance P and vasoactive intestinal peptide, L432 bronchial

role of cyclooxygenase products in neuroeffector control and airway hyperresponsiveness, L47

role of PKC in nonsensitized and passively sensitized bronchial smooth muscle, L966

cell proliferation, vasoactive intestinal peptide effects on, L1047

constriction, effects of inhibiting 5-lipoxygenase and cyclooxygenase, L446 contractile enzyme activity, mechanical strain effects on, L999

contractility, regulation by  $CO_2$ , role of  $pH_i$ , L642

contraction, and phosphorylation of actin-membrane attachment proteins, C563

cultured airway myocytes as model system (review), L1

hyperresponsiveness, role of cyclooxygenase products, L47

measuring luminal area changes by computerized videomicrometry of microexplants, L519

muscarinic and β-adrenergic regulation, role of G proteins and calcium-activated K channels, L221

muscarinic receptors

increased expression in Basenji-greyhound dog, L935

subtype distribution and effects on adenylyl cyclase, L101

parasympathetic innervation, acetylcholine release from, catecholamine effects on, L368

peripheral vs. inner [Ca<sup>2+</sup>]<sub>i</sub> levels, effects of isoproterenol or caged cAMP photolysis, C771

pollen-sensitized, myosin phosphorylation, [Ca<sup>2+</sup>]<sub>i,</sub> and calmodulin activity, L739

relaxation

anesthetic-induced, mechanisms, L166, L187

cyclic nucleotide-induced, role of sarcoplasmic reticulum Ca<sup>2+</sup> ATPase, L407

hypoxia- and hypercapnia-induced, role of  $pH_i$ , L207

hypoxia-induced, role of Ca<sup>2+</sup> entry inhibition, L201

nitric oxide-mediated, role of calciumactivated potassium channels, L152 sodium-potassium-chloride cotransport

in, L551 tracheal

acetylcholine release from tracheal parasympathetic nerves,  $\beta$ -adrenoceptor effects on, L950

calcium-dependent potassium channels, upregulation by protein kinase G-Iα, L1057

mitogenesis, role of mitogen-activated protein kinase, L894

relation between stiffness and force during contraction, and role of cross bridges, C1267

Muscle, smooth, lymph node

serotonin-induced NO-dependent relaxation, H2246

Muscle, smooth, vascular

see also Endothelins; Vascular tone; Vasoconstriction; Vasodilation

A7r5 and A10 cells, effects on Na-K-Cl cotransport in cerebral vascular endothelial cells, C747

adenosine-induced pulmonary vasodilation, receptor subtype involved, H1862

α-adrenoceptor constriction of arterioles, effects of acidosis and hypoxia, H2068

angiotensin II effects and clearance rate, fetal vs. maternal, E237 aortic

L-arginine uptake and regulation by NO synthase inducers, H1158 contraction from hemorrhagic hypotension, role of viscoelasticity,

NADPH oxidase superoxide-generating system, H2274

aortic, thrombin-induced proliferation, delayed kinetics, C1141 arterial

calponin nonphosphorylation during contraction, C903

potassium channels (review), C799 desensitization to bradykinin relaxation, role of cGMP, H865 excitation-contraction coupling

mechanisms, H74 arteriolar gap junctional connexin proteins, H729

arteriolar responses to local pressure changes, communication to remote arterioles, H1379

calcium movements from free cytoplasmic to storage compartments, C503

Ca<sup>2+</sup>-insensitive contraction after acidic ADP, C21

cell cycle  $G_1/S$  interface, roles of insulinlike growth factor I and c-myb in  $[Ca^{2+}]_i$  control, C856

cell migration, effects of thrombin and urokinase receptor, C1195

cell proliferation

inhibition by monocyte chemoattractant protein 1, H1021 potassium effects on, R825 in pulmonary hypertension, role of static wall tension, H1133

celle

agonist-induced force enhancement, role of protein kinase C, C1202 angiotensin II-induced  $\alpha_1$ -adrenergic

receptors in, H1006 aortic, properties of hypertension-in-

duced humoral factors, H767 delayed rectifier K<sup>+</sup> current in, phosphorylation by PKA, H926

dual serotonin effects on Ca<sup>2+</sup> channels, H544

effects of SR-49059 (vasopressin  $V_{\rm 1a}$  antagonist) in human, H404 microtubule disruption, stimulation of

system A transport, C1512 thin filament regulation of force activation, C237

contractions

effects of L-arginine analogues, H1966 and relaxation, myosin light chain and MLC kinase phosphorylation, and [Ca<sup>2+</sup>]<sub>i</sub>, H2466

coronary artery, feedback and feedforward control of coronary blood flow, model for, H895

coronary microvessels, diameter regulation, role of myogenic mechanisms, H788

glycolytic vs. oxidative metabolism and compartmentation of energetics, C628

inducible L-arginine/nitric oxide pathway, H1122

intracellular [Ca<sup>2+</sup>]<sub>i</sub> changes during hypoxic pulmonary vasoconstriction, H301

intracellular pH control and relation to tension, C580 L-162,313-activated phosphoinositide turnover, effects of angiotensin II receptor antagonists on, R820

L-type calcium channels at renal resistance artery bifurcations, F251

metabolism, energy consequences of change from lactate production to glucose oxidation, H713

novel 5-HT<sub>1</sub>-like receptor mediating cAMP synthesis in porcine pial vein, H1383

Na<sup>+</sup>/H<sup>+</sup> exchange, in normotensive vs. hypertensive rats, C14

osmotically activated ion transport in, vs. Chinese hamster ovary cells, C147

portal vein

Ca<sup>2+</sup>-activated Cl<sup>-</sup> current in, stimulation by Na<sup>+</sup>/Ca<sup>2+</sup> exchange, H1906

changes in contractile function and ion channels in atherosclerosis, H2522

pulmonary

cell proliferation in normotensive vs. pulmonary hypertensive rats, L465 chemokine expression by, L856

dual effects of histamine on tone and role of prostanoids, H653

fast transient outward current in human cells, H2358

fetal cells, dexamethasone effects on tropoelastin expression, L491

hypoxic vasoconstriction, roles of guanylate cyclase activation by NO and  $H_2O_2$ -catalase, L546

nitric oxide production, regulation by TGF-β, L862

nitric oxide synthase induction in, endotoxin effects on, L509

vasoconstrictor responses to angiotensin peptide ANG IV vs. other vasoactive peptides, L302

vasodilation from leukotoxin, L123 voltage-gated K<sup>+</sup> channels in, regulation by cytochrome *P*-450, C259

relaxation, role of cGMP inhibition of phospholipid metabolism, C376 in renal microcirculation, effects of

in renal microcirculation, effects of cGMP-dependent dilators on autoregulatory responses, F338

responses to hypoglycemic hypoxia in newborn and role of adenosine, H871

role in exercise training and hypothyroidism effects on aortic vascular reactivity, H1428

role of calcium channels in pressure-flow relations, H371

sensitivity to NO, disruption in fetal pulmonary hypertension, H1483

in small resistance arteries, mechanism of cGMP action in, H1223 stretch-activated phospholinase C activ-

stretch-activated phospholipase C activity, C458

tone effects on transmural coronary flow distribution in hypoperfusion, H1284

umbilical artery impaired cyclic nucleotide-dependent vasorelaxation, H202

vasorelaxation

cGMP-mediated, dysfunction in endotoxin-induced injury, L1029 NO-mediated, role of calcium-activated potassium channels, L152

venous, endothelin receptors, subtypes and effects of blood flow and oxygen tension, H345

Muscle, striated

capillary functional organization in, changes with age, H1215

in dystrophic hamster, thyroxine effects on, R779

Muscle, white

in fish, energy metabolism during hypoxia and recovery, R1178

Muscular dystrophy

Duchenne and Becker forms, prednisone effect on protein metabolism, E67

in hamster, thyroxine effects on lung, diaphragm, tongue, and heart, R779

Mutagenesis

site-directed, and multifunctional transporters, C1077

Myeloperoxidase

gastric mucosal, after chronic aspirin doses, G134

Myenteric plexus

changes in colitis, benefits of nitric oxide inhibition, G673

Myoballs

expression and modulation of inwardly rectifying potassium conductance, C490

Myoblasts

expression and modulation of inwardly rectifying potassium conductance, C490

Myocardium

see also Ischemia, myocardial; Ischemia-reperfusion; Ischemic preconditioning; Heart ventricles, left; Muscle, heart

best strain indexes for mapping ischemic regions using tagged MRI in 3-D, H1918

blood flow and oxygenation in acute plus chronic hypoxemia, H974

congenital hypoxemia, tolerance to hypothermia alone or with cardioplegia, at various ages, H1165

contractility, effects of nitric oxide on cardiomyocyte calcium current, C45 contraction, role in coronary flow ampli-

tude (Letter to Editor) H2162 critical intracellular O<sub>2</sub> level, and capillary-to-cell O<sub>2</sub> gradient, H1675

fractal analysis for regional blood flow determinations, H112

heat-shock transcription factor, activation by heat and exercise, C1387

'hibernation', non-roles of adenosine and ATP-dependent K channels, H2294

HSP70 levels during exercise and heat stress, R92

hydrogen peroxide-induced damage, protective effect of hypoxia, H614

infarction

arterial remodeling after, and effects of captopril, H2092

infarct size decreased by monoclonal antibody to complement component C5a, H448

left ventricular dysfunction from, and depressed cardiorespiratory baroreflex control, H218 mechanisms of ischemic preconditioning benefits, H233, H935

myocyte postinfarction contractility and calcium dynamics and effects of propionyl-L-carnitine, H1702

right ventricular, size, effects of right ventricular hypertrophy or pulmonary stenosis, H1781

role of opioid receptors in protective effects of ischemic preconditioning, H2157

transmural, nonreperfused, from coronary occlusion, motion and deformation 1 week later, H1304

interstitial edema and lymph flow in cardioplegic arrest, H178

myofilament pH sensitivity, and troponin I isoforms, C323

β-myosin heavy chain gene expression, effect of hypertension and caloric restriction, R33

neuropeptide Y electrophysiological effects, H2195

oxygen consumption

feedback and feedforward control of coronary blood flow, model for, H895

relation to cGMP level and effects of thyroxine-induced hypertrophy, H686

reduced inotropic responses to α-adrenergic stimulation in left ventricular hypertrophy, H1202

regional wall motion, measuring with ultrasonic single-crystal sonomicrometer, H1358

relaxation, effects of chronic supraventricular pacing tachycardia, H2104

responses of glucose catabolism proteins during exercise training, R130

'stunned'

and  $[Ca^{2+}]_i$  homeostasis, H100 cholinergic and  $\alpha$ -adrenergic coronary vasomotor responses, H886

effects of prior transient adenosine infusion, H1149

estrogen effects on ischemia- and reperfusion-induced ventricular arrhythmias, H2569

and mechanoenergetics of failing hearts, H1061

tissue hematocrit gradient, effect of erythrocyte deformability, H260

total microvascular flow, nutritive flow, and myocardial cooling during retrograde cardioplegia, H1555

transmural bioenergetic responses to progressively higher workloads, H1891

working vs. nonworking, responsiveness to insulin, E48

Myocutaneous flap

postischemic neutrophil recruitment and lipoxygenase activation, role of leukotriene B<sub>4</sub>, H2167

Myocytes

see also Cardiomyocytes of airway, as model for airway smooth muscle studies (review), L1

amino acid transmembrane transport and intracellular metabolism, E75

epicardial, phase 1 repolarization and transient outward K<sup>+</sup> current in Chagas' cardiomyopathy, H1258 Myofibrillar Ca<sup>2+</sup> responsiveness and postischemic cardiac contraction,

H100 Myofilaments

see also Actin filaments

differential pH sensitivity, role of troponin I isoforms, C323

interaction with Ca2+, and cGMP effects on posthypoxic cardiomyocyte relaxation, H2396

Myogenic response

role in regulation of coronary microvessel diameter, H788

Myogenic tone, see Vascular tone Myoglobin

nephrotoxicity from, during hemorrhagic hypotension, role of capillary blood flow changes, F839

Myometrium

blood flow, vs. endometrial blood flow, measuring in small animals, R569 calcium channels in, effects of estrogens

on, C64

nonlabor activity in pregnancy, effects on systemic and uteroplacental hemodynamics during sleep, H1734

prelabor distal vs. proximal contractions, relation to parametrial arterial flow velocity, R614

Myosin

see also Cross bridges

composition in kyphoscoliotic mouse, C513

Myosin heavy chain

effects of tachycardia-induced cardiomyopathy, H2426

expression in self-reinnervated muscle,

isoform β, regulation of cardiac gene expression, effect of hypertension and caloric restriction, R33

in skeletal muscle, isoform composition and loading effects, C419

synthesis, glutamine effects on, E730

Myosin light chain

MLC-1, fast-twitch isoform, from bovine muscle, gene cloning and muscle levels after clenbuterol, E858

phosphorylation

and ADP-induced Ca2+-insensitive smooth muscle contraction, C21 and force activation in vascular

smooth muscle, C237

effects of NO donors and 8-bromocGMP on, in small resistance arteries. H1223

relation to MLC kinase phosphorylation and [Ca2+], in arterial tone, H2466

in sensitized airway smooth muscle, L739

regulatory subunits, phosphate incorporation, effects on force development in skeletal muscle, C596

zero gravity effects on fast and slow isoform mRNAs, C466

Myosin light chain kinase

in airway smooth muscle, mechanical strain effects on, L999

phosphorylation, relation to MLC phosphorylation and [Ca2+], in arterial tone, H2466

Myosin light chain phosphatase and ADP-induced Ca2+-insensitive smooth muscle contraction, C21 Myotubes

expression and modulation of inwardly rectifying potassium conductance, C490

Naloxone

anorectic potency, effects of food restriction and sweet taste, R248

Naproxen

gastric mucosal effects, after chronic aspirin doses, G134

Nasal gland cells

avian, naive vs. fully differentiated, muscarinic-activated pHi changes, C944

Nasal polyps

epithelial cells, α-adrenergic-stimulated NaCl(K) cotransport in, role of protein kinase C. L414

Nasal septum

serous gland acinar cells, acetylcholine effects on [Ca2+], L361

Nasopharynx

closure during swallowing and belching, mechanism and timing, G1037

Na+-K+-ATPase, see Sodium-potassium pump

Natriuresis

after hypertonic and isotonic saline infusions, role of oxytocin, R634 from intrarenal adrenomedullin infu-

sion, F657

postprandial, and peptide YY effects on renal function, F754

pressure-induced, mechanisms: intrarenal regional blood flow and renal perfusion pressure, F404

in response to extracellular volume expansion, roles of prostaglandins and NO, R1442

Natriuretic peptides see also Atrial natriuretic peptide, Brain natriuretic peptide, Ctype natriuretic peptide

chloride channel activation, in proximal convoluted tubule, role of cGMP, F323

Natural killer cells

splenic, effects of IFN-α injection into hypothalamic nuclei, R1406

Nausea

and gastric slow wave dysrhythmia, from motion sickness, role of cholinergic and α-adrenergic pathways, G539

Neonates, see Newborn

Neovascularization

hypoxia-stimulated capillary network formation in lung microvessel endothelial cells, L789

Nephritis

anti-glomerular basement membrane, glomerulosclerosis after, role of early inflammation, F258

Nephrotic syndrome

effects on apolipoprotein AI catabolism in rat, F532

**Nerve function** 

noradrenergic, changes in colitis, benefits of nitric oxide inhibition, G673

Nerve growth factor

cytokine-binding proteins in lung (review), L869 metabolic responses in PC12 cells, C936 Nerves

periarterial, uterine artery constriction and dilation by, effects of pregnancy on, H1694

Neural afferent fibers

vagal and splanchnic, role in enterogastric inhibition of gastric acid secretion, G286

vagal and splanchnic, role in neural signaling of gastric water absorption, R236

Neural control

of motor unit muscle properties, effects of self-reinnervating muscle, C527

Neuroendocrine system

interaction with immune system, epinephrine effects on hepatic TNF and IL-6 production, R896

Neuroendocrine-immune axis cholestatic suppression of hypothalamic PGE2 and effects on IL-1-induced

ACTH release, G404 Neurogenic inflammation

tracheal, role of neurokinin receptors in leukocyte-endothelial adhesion, 1.263

Neurohumoral communication

angiotensin II and subfornical organparaventricular nucleus—spinal cord pathway, R625

**Neurokinin** receptors

NK<sub>1</sub>, role in neutrophil and eosinophil adhesion to tracheal endothelial cells, L263

NK<sub>1</sub>, role in substance P-increased microvascular permeability, R1060

Neurokinins

depletion, effects on antigen-induced pulmonary changes after sensitization, L781

neurokinin A, and tachykinin receptors as mediators of canine ileal motility, G161

neurokinin A, effects on human lung fibroblast proliferation and chemotaxis, L278

Neuroma

resection-induced, calcitonin gene-related peptide accumulation and activity, H584

Neuromuscular denervation

effects on skeletal muscle lactate transport, R884

Neurons

in glucose regulation, effects of hepatic denervation on hepatic response to glucagon, E194

hypothalamic and brain-stem, angiotensin II type 2 receptor fragment effects on delayed rectifier K+ current, C278

nonadrenergic, noncholinergic, in esophagus, NO sites and colocalization with VIP, G59

sensory, role in irritant-induced gastric fluid increase, G200

Neuropeptide Y receptors Y<sub>1</sub>, in rat brain cortex, R192

Neuropeptides

autonomic, role in immune system development and homeostasis, E168 effects on human lung fibroblast proliferation and chemotaxis, L278

from airway sensory nerves, effects on airway epithelial cells, L957

interactions with neurotransmitters in parabrachial nucleus transmission of visceral afferents, R786

neuropeptide Y

content in rat brain cortex, R192 effects on food intake during short and long photoperiods in sparrows, R1418

effects on food intake given intraorally, R423

electrophysiological effects on myocardium, H2195

mRNA levels, glucocorticoid and insulin reciprocal effects, R142 plasma levels, after chronic NO syn-

thase inhibition, H2267 plasma levels and cardiac overflow, aging effects on, R278

#### Neurosteroids

role in immune system development and homeostasis, E168

Neurotransmission

nonadrenergic noncholinergic, in esophageal smooth muscle, roles of NO and K<sup>+</sup> channels, G831

Neurotransmitters

and acetylcholine release from airway smooth muscle nerve endings, L432 autonomic, role in glucose homeostasis after hyperglycemia, R475

and cAMP-sensitive K channels, role in modulating coronary vasoconstriction, H1077

interactions with neuropeptides in parabrachial nucleus transmission of visceral afferents, R786

 $NPY/NPY\ Y_1$  receptor/G protein complex, in rat brain cortex, R192 sensory, tachykinins as, in viscera-

stimulated cardiovascular reflexes, H526

#### Neutrophil attractant/activation protein-1, see Interleukins, IL-8; Chemokines Neutrophil elastase

release during extracorporeal circulation, effects of kallikrein inhibitors on, H1352

Neutrophils

see also Leukocytes, endothelial interactions

activation by extracorporeal circulation, effects of kallikrein inhibitors on neutrophil elastase release, H1352 age-related changes, effects of dietary

fish oils, R208

endothelial interactions, in isolated coronary microvessels, H490

gastrointestinal mucosal cytotoxicity from, role of interferon-γ, G843 migration

across T84 epithelial cells, polarity of early adhesion, C472

into bronchoalveolar fluid, effects of anti-cytokine-induced neutrophil chemoattractant antiserum, L245 measurement of locomotive force generation, C1308

phospholipase  $A_2$  activation in, roles of leukotriene  $B_4$  and extracellular

Ca2+, C138

postischemic recruitment and lipoxygenase activation in myocutaneous flap, role of leukotriene B<sub>4</sub>, H2167 priming, after intestinal ischemia-reperfusion, role of phospholipase  $A_2$  and effects of quinacrine, G397

pulmonary, injury-induced changes in kinetics, pentoxifylline effects on, L27

role in complement-induced reperfusion injury, H448

tracheal recruitment by Staphylococcus aureus via stimulation of airway epithelial cell interleukin-8, L85

#### Newborn

see also Infants; Maturation

angiotensin II  $AT_2$  receptors, mRNA distribution in developing kidney and adrenal gland, F922

aortic hemodynamics and effects of vasoconstriction, H558

calcium channel-gated Ca<sup>2+</sup> release in atrial myocytes, H1195

cardiac fibroblast secretion of transforming growth factor-β, effects of norepinephrine and angioensin II, C910

cardiomyocyte Na<sup>+</sup>/Ca<sup>2+</sup> exchange ontogeny in rabbits and guinea pigs, relation to sarcoplasmic reticulum maturity, H1714

role in contraction, H1723

cerebral protein synthesis rates and recycling of leucine, age-related changes, R549

constitutive endothelial NO synthase gene expression, regulation during lung development, L589

developmental changes in epicardial action potential configuration and transient outward current, H2513

effects of sympathectomy and maternal separation on stress responses and adrenal sensitivity to ACTH, R1281 endothelin receptor subtypes present in

piglet pulmonary vasculature, L607 free vs. sulfoconjugated catecholamines, effects of corticosteroids, E28

glucocorticoid-accelerated intestinal maturation, normal or deviant pathway?, G139

glutamine and glucose metabolism in enterocytes, R334

hypoxia

hypoglycemic cerebrovascular responses and role of adenosine, H871 pial vasodilation from, effects of opioids and NO, H226

iloprost-induced pial arteriolar dilation, indomethacin effects on, H1884

impaired cardiopulmonary baroreflex control of renal sympathetic response to volume expansion, H1343

intestinal vascular resistance, nitric oxide role in regulation, G949

lung development, indomethacin effects on, L56

mechanisms of hypercapnia-stimulated cerebrovascular prostaglandin synthesis, H591

metanephric apoptosis and kidney maldevelopment in bcl-2-deficient mice, F73

mitochondrial oxidative enzymes in proximal convoluted tubule, developmental regulation by thyroid hormones, F634 ontogeny of gastric mast cell degranulation and relation to mucosal permeability, G121

ontogeny of procollagen type I synthesis sites during human lung development, L309

perinatal period, aortic hemodynamics and effects of vasoconstriction, H558

peroxide-induced retinal vasoconstriction, vs. effects in adult retina, H628

phenobarbital exposure, effects on ageand sex-specific growth hormone profiles regulating monooxygenases, E439

pial artery, vasodilation

β-adrenoceptor-induced, role of nitric oxide, cAMP, and cGMP, H1071

prostaglandin-induced, role of NO and cyclic nucleotides, H1436

premature, lung injury in, pH-sensitive liposomes for antioxidant delivery to type II cells, L374

pulmonary hypertension, pathogenesis: altered reactivity to vasodilators in utero, H288

pulmonary hypertension, vascular smooth muscle cell proliferation in normotensive vs. pulmonary hypertensive rats, L465

tracheal gap junctions, changes in distribution with postnatal development, L576

ureteral obstruction, regulation of renal growth factors and clusterin by angiotensin AT<sub>1</sub> receptors, F1117

NHE, see Sodium/hydrogen exchang-

# Nickel ion

responses of calcium receptors and  $[Ca^{2+}]_i$  in osteoclasts, effects of caffeine on, F447

transport into cells, tracking with fluorescent probe, C1354

β-Nicotinamide adenine dinucleotide activation of skeletal sarcoplasmic reticulum Ca<sup>2+</sup> release channel, C1235

role in regulation of Na $^+$ -P $_i$  symport in kidney cells, C741

Nicotinamide adenine dinucleotide, reduced

myocardial, effect of substrates on, H82 Nicotinamide adenine dinucleotide

phosphate, reduced as indicator of critical myocardial intracellular O<sub>2</sub> level, H1675

NADPH oxidase, role in hypoxic pulmonary vasoconstriction, L747

oxidoreductase, superoxide-generating system in aorta, H2274

# Nicotine

effects on gastric ulcer margin hyperemia, G153

Nicotinic receptors

on sympathetic neurons, role in regulating [Ca<sup>2+</sup>]<sub>i</sub>, C829

role in glucose-induced pancreatic insulin release, E336

# Nicotinic synapses

role in histamine H<sub>2</sub> receptor-induced colonic secretion, G465

Nifedipine

actions in KCl- and carbachol-contracted bronchi, effects of hypoxia on, L201 effects on stretch-induced smooth

muscle cell bromodeoxyuridine uptake, H1133

effects on vascular waterfall and arterial resistance, H371

#### Nitrate

inflammatory mediator-induced, in fetal type II cells, L501

serum levels in cirrhotic patients, G459

Nitric oxide

see also Endothelium-dependent vasodilation; Endothelium-derived relaxing factor; N<sup>G</sup>-Nitro-L-arginine; N<sup>G</sup>-Nitro-L-arginine methyl ester; L-Arginine

beneficial and harmful roles in pulmonary oxidant reactions (editorial),

L697

blockade effects on renal cortical vs. medullary blood flow and on sodium and water balance, R317

blockage site in vasodilation pathway in fetal pulmonary hypertension, H1483

and calcium effects on cGMP formation in pancreatic acinar cells, G900

contribution to coronary vasodilation during hypercapnic acidosis, H39 and effects of TNF- $\alpha$  and IL-1 $\beta$  on air-

way ciliary motility, L911 effects on cardiac intrinsic nervous sys-

tem, R403 effects on cardiomyocyte calcium cur-

rent, C45 effects on cytosolic K<sup>+</sup> in glomerular mesangial cells, F1081

effects on endothelial cell xanthine dehydrogenase/xanthine oxidase, L809

effects on hepatocyte glucose output and urea production, G183

effects on macrophage glucose metabolism and glyceraldehyde-3-phosphate dehydrogenase, C669

effects on oxidized LDL-induced leukocyte-endothelial cell interactions in postcapillary venules, H1643

effects on pulmonary vascular responses to angiotensin peptide ANG IV, L302

effects on renin secretion in juxtaglomerular granular cells,

F948
in perfused juxtaglomerular appara-

tus, F953 effects on rostral ventrolateral medulla,

R958 effects on tight junction permeability

and ATP in Caco-2 cells, G361 endothelium-derived

effects on fetal pulmonary arteries vs. pulmonary veins, H1586 posthemorrhagic, ATP-MgCl<sub>2</sub> effects

on, H1390 endotoxin-induced in lung, ethanol ef-

endotoxin-induced in lung, ethanol effects on, L991 Escherichia coli endotoxin effects on,

H955 esophageal pathway and relationship to

VIP, G59 and ethanol effects on airway ciliary motility, L596 evolution in fish and relation to air breathing, R816

gastric release, from central vagal activation by thyrotropin-releasing hormone, G895

glomerular and tubular interactions with adrenergic activity, F1004

and inflammatory changes in enteric neural regulation of smooth muscle, G823

inhaled, pulmonary effects during hypoxic and U-46619-induced vasoconstriction, H1422

inhibition of endothelial NO synthase, H2216

interaction with calcitonin gene-related peptide in sensory neuron-induced gastric vasodilation, G791

as mediator of ischemic preconditioning benefits in rat hearts, H242

and monocyte chemoattractant protein 1 inhibition of vascular smooth muscle cell proliferation, H1021

non-role in endotoxin-induced cardiac contractile dysfunction, H2460 penile erection from, effects of aging on,

H467 production by endothelial cells, fibrin

and fibrinogen effects on, C520 regulation by TGF-β in pulmonary

smooth muscle cells, L862 role in β-adrenoceptor stimulation of airway cilia, C1342

role in β-adrenoceptor-induced pial vasodilation in newborn, H1071

role in alveolar macrophage cytoplasmic motility during viral lung infection, L399

role in blunted pressure-dependent changes in vasa recta blood flow and natriuresis in SHR, F907

role in colitis inflammatory changes, G673

role in coronary artery desensitization to bradykinin relaxation, H865

role in endotoxemic vascular hyporeactivity to phenylephrine, G177 role in esophageal nonadrenergic non-

cholinergic inhibitory junction potentials, G831 role in gastrointestinal smooth muscle

function, and hemoglobin effects on esophagus, G443 role in hemodynamic response to hemor-

rhage, R171 role in hypoxia-induced pial vasodilation

in newborn, H226
role in neurally activated functional hy-

peremia in cerebellar parallel fibers, R1153

role in neurogenic constriction and dilation of uterine artery, H1694 role in nucleus tractus solitarius auto-

nomic activity, R487 role in peripheral vasodilation of portal

hypertension, G459
role in prostaglandin-induced pial artery

vasodilation in newborn, H1436 role in pulmonary hypoxic vasoconstriction, L546

role in regulation of small intestinal motor patterns. G207

role in regulation of vascular resistance in postnatal intestine, G949 role in renal natriuretic response to extracellular volume expansion, R1442

role in restitution of injured gastric mucosa, G933

role in salt-induced hypertension and pressure natriuresis in Dahl rat, H2375

role in serotonin-induced lymph node relaxation, H2246

role in substance P-increased microvascular permeability, R1060

sensitivity of cardiac intrinsic nervous system, R403

synthesis, effects of dietary arginine levels, E360

#### Nitric oxide donors

effects on cGMP actions in small resistance arteries, H1223

# Nitric oxide synthase

activity, Escherichia coli endotoxin effects on, H955

chronic inhibition, hypertension from, roles of renin-angiotensin and sympathetic nervous systems, H2267

constitutive endothelial, pulmonary, regulation during lung development, L589

constitutive, expression by endothelial cells, fibrin and fibrinogen effects on, C520

constitutive, in gas bladder of facultative air-breathing teleost, R816

constitutive isoforms, renal distribution in various mammal species, F885

endothelial, inhibition by NO, H2216 endotoxin-induced, in astroglia, inhibition by angiotensin II, C700

esophageal sites and colocalization with VIP, G59

inducible

and L-arginine transport into aortic smooth muscle cells, H1158

by cytokines, in cardiac microvascular endothelial cells, H1293 expression in inner medullary collect-

expression in inner meduliary collecting duct cells, endotoxin and cytokine effects on, F770 gene expression in type II cells, effects

of inflammatory mediators on, L501 in human vascular smooth muscle, H1122

role in ischemic brain damage, R286 induction in pulmonary artery smooth muscle, endotoxin effects on, L509 inhibition

by endogenous N<sup>G</sup>,N<sup>G</sup>'-dimethyl-Larginine, inflammatory effects, H2224

by TGF-β in pulmonary smooth muscle cells, L862

effects on capillary hydraulic conductivity, H1856

ontogeny in juxtaglomerular apparatus, comparison with renin, F1164

Nitric oxide synthase inhibitors effects on hemodynamics and O<sub>2</sub> delivery

# in endotoxic shock, H2017

#### Nitriti

inflammatory mediator-induced, in fetal type II cells, L501

serum levels in cirrhotic patients, G459

Nitrogen

metabolism

 $\alpha\text{-ketoisocaproic}$  acid hepatic metabolism in cirrhosis, E298

protein malnutrition and hepatic amino acid transport in suckling rats, E368

urinary excretion, measuring whole body protein synthesis via <sup>13</sup>CO<sub>2</sub> vs. plasma precursor techniques, E174

Nitrogen balance

in renal failure, long-term adaptation to very low protein diet, E668

NG-Nitro-L-arginine

effects on aldosterone secretion, R1137

NG-Nitro-L-arginine methyl ester (L-NAME)

beneficial effects in colitis, G673 effects on aldosterone secretion, R1137 effects on eating, thermogenic activity, and  $O_2$  consumption, R1533

effects on nucleus tractus solitarius neuronal activity, R487

effects on renal cortical vs. medullary blood flow and on sodium and water balance, R317

Nitroprusside

effects on angiotensin II-mediated phosphatidylcholine hydrolysis, C376

effects on myocardial O<sub>2</sub> consumption and cGMP level in thyroxine-induced hypertrophy, H686

smooth muscle relaxation from, mediating pathways, C171

umbilical artery smooth muscle response to, H202

S-Nitroso-N-acetylpenicillamine effects on permeability and ATP in Caco-2 cells, G361

S-Nitroso-N-acetyl-DL-penicillamine effects on endotoxin-induced vascular hyporeactivity to phenylephrine, G177

Nociception

and lingual trigeminal nerve sensitivity to acids, R58

**Nociceptive C-fibers** 

sensitization in zinc deficiency, R1423 Nonadrenergic noncholinergic in-

hibitory system

and  $\beta$ -adrenergic agonist effects on acetylcholine release, L950

in airways, respiratory syncytial virus effects, L1006

Nonadrenergic noncholinergic neurotransmission

in esophageal smooth muscle, roles of NO and K<sup>+</sup> channels, G831

Nonlinear dynamics

of arterial blood pressure and renal blood flow, H621

Nonsteroidal anti-inflammatory drugs

see also Indomethacin

effects on chief cell pepsinogen secretion and calcium mobilization, G968 gastric mucosal adaptation to, G134

Noradrenergic activity

of hypothalamic paraventricular nucleus, role in hypertension in DOCA rats vs. SHR, H1549

Noradrenergic neuronal activity and REM sleep deprivation, R1456 No-reflow phenomenon

effects of ischemic preconditioning and role of ATP-sensitive K channels, H2063

Norepinephrine

see also Catecholamines

effects of REM sleep deprivation, R1456 effects on glucose metabolism in guinea pig brown fat cells, R98

effects on oxygen, lactate, and glycerol metabolism in marsupial skeletal muscle, R1217

effects on  $pH_i$  in vascular smooth muscle, C580

effects on plasma glucose and free fatty acids in fish, R1163

effects on protein phosphatase 1 in proximal tubule, F279

effects on renal microcirculation, and high-protein vs. low-protein diet, F302

effects on transforming growth factor-β secretion from neonatal cardiac fibroblasts, C910

feedback and feedforward control of coronary blood flow, model for, H895

free vs. sulfoconjugated, in fetus vs. preterm newborn, effects of corticosteroids, E28

hepatic gluconeogenic response, cold acclimation effects on, E1184

hepatomesenteric release and removal, R924

kinetics and metabolism, aging effects on, R278

kinetics, caffeine effects on, in elderly, E1192

plasma levels, interleukin-6 effects in humans, E813

production and metabolism in liver, mesenteric organs, and kidney, G641 pulmonary vascular bed responses to,

effects of PKC inhibitors on, L532 release from hypothalamic paraventricular nucleus, in DOCA rats vs. SHR,

H1549 role in neurogenic constriction and dilation of uterine artery, H1694

role in proneness to diet-induced obesity, R389

Nuclear factors

interferon-γ-enhanced factor X, and interferon-γ-induced MHC class II gene expression, C127

κB, in glomerular epithelial cells, activation by interleukin 1β and effects on laminin B2 chain mRNA, F273

KB, interaction with DNA and glucocorticoid receptors in mononuclear cells, C331

**Nuclear signaling** 

and lipoxygenase inhibitor effects on platelet-derived growth factor-induced mitogenesis, C604

Nucleophiles

and peroxynitrite chemistry, L699

**Nucleotide** receptors

calcium-elevating, on cortical thick ascending limb, F496 on cervical cells, with opposing effects on

permeability, C1215

Nucleotides

extracellular, effects on  $[Ca^{2+}]_i$  of cortical thick ascending limb, F496

extracellular, effects on leukocyte adherence to pulmonary artery endothelial cells. L666

Nutrients

see also Diet; Dietary components; Food intake

ketone body precursors as potential nutrients, metabolism in pigs, E660 oxidation rate, digoxin effects on, E1051 sodium-couled transport in entero-

cytes, Na<sup>+</sup> pump, membrane conductances, and apical membrane potential, R1050

U

Obesity

A<sub>1</sub> adenosine receptor hyperactivity and phosphorylation-regulated coupling in Zucker rat adipocytes, E693 codominant effects of fatty (fa) gene in

fatty rat litters, E15

development in suckling Zucker rats, β-adrenoceptor agonist effects on, E1039

dose-response relations of dietary fat and body fat deposition, E546

early changes in phosphatidylinositol 3-kinase activation in muscle and adipocytes, E604

food intake, diet composition, and metabolism in parabiotic partner of obese rat, R874

impaired postprandial triacylglycerol clearance in adipose tissue, E588

metabolic and antidiabetic effects of  $\beta_3$ adrenergic agonist BRL-35135 in
obese mice, E678

overexpression of GLUT-4, effects on glucose metabolism and fatty acid synthesis, E956

parental, and energy expenditure in children, E917

postprandial thermogenesis and oxygen consumption, in men vs. women, role of skeletal muscle vs. splanchnic tissue, E433

proneness to role of peripheral and central norepineprine activity, R389

roles of dietary fat and protein levels vs. genetics, R658

reduced venous distensibility and venous volume, R562

relation to skeletal muscle fiber composition and insulin-induced glucose transport, E453

sodium pump and digoxin effects on energy expenditure and nutrient oxidation rate, E1051

waist-to-hip ratio and enhanced insulin sensitivity in older athletes, E484

Octapeptide

effects on pancreatic goblet cell degranulation, G24

Oil

dietary, from corn, linseed, or fish, effects on clearance of oxidatively modified chylomicrons, G709

Oleate

effects of fasting-refeeding cycling on tissue stores, R498

Oligohydramnios

model of maternal hyposmolality, R358

Omeprazole

effects on indomethacin-delayed gastric ulcer healing, G276

effects on parietal cells (letter to the editor), G387

Oncogenes

bcl-2, absence-induced metanephric apoptosis and kidney maldevelopment, F73

Ontogeny, see Lung, development; Maturation

 $\begin{array}{c} OPC\text{-}21268 \text{ (vasopressin } V_{1a} \text{ antagonist)} \end{array}$ 

vs. SR-49059, effects on human vascular smooth muscle cells, H404

Opioid growth factor

modulation of corneal epithelial outgrowth, R942

**Opioid receptors** 

effects of blockade on food intake in starved and satiated rats, R248 role in protective effects of myocardial ischemic preconditioning, H2157

Opioids

see also Enkephalins

endogenous central, role in sodium and water balance and effects of dietary sodium restriction, R723

mRNA expression in cholestatic liver, G346

role in hypoxia-induced pial vasodilation in newborn, H226

Oral cavity

swallowing in cat, videofluoroscopy and electromyography, G232

Oral-pharyngeal function

during swallowing, aging effects on, G389

Orchidectomy

effects on pituitary levels of gonadotropin-releasing hormone in rat, E685

Organic anion transporter multispecific, and bile acid facilitation of protoporphyrin excretion, G754

Organic anions

basolateral transporter in proximal tubule S3 segment, F1109

hepatic uptake systems basolateral dicarboxylate/cholate anti-

port system, G797 in skate, G18

Organic cation/proton exchanger

renal, and proximal tubular secretion of cyclosporin analog, F46

Organic cations

hepatic lysosomal uptake and transport and biliary excretion, G480

Organic dusts

lung disease from, tannin-mediated calcium influx in alveolar macrophages, and arachidonic acid release, L33

Organic ion transport

heat-shock-stimulated proximal tubular daunomycin secretion, F135

Organic osmolytes

regulation, molecular basis (Cannon lecture), F983

renal, response to acute water load or water deprivation, F227

Organogenesis

of kidney, abnormalities in bcl-2-deficient mice, F73 Ornithine

plasma kinetics and effects of dietary arginine levels, E360

Ornithine decarboxylase

gastric mucosal, after chronic aspirin doses, G134

Oropharynx

swallowing in cat, videofluoroscopy and electromyography, G232

Osmolality

atrial natriuretic peptide secretion from, role of calcium and sodium ions, E476

extracellular

effects on aldosterone secretion: role of chloride influx, R8

role in thirst attenuation during headout immersion in water, R583

of plasma

in pregnancy, effects on fetal urine flow, R358

role in water intake and hypothalamoneurohypophysial activity in rat, R651

vasopressin stimulation by, role of synaptic connection with anterior hypothalamus, R1034

Osmolarity

effects on apical high-conductance K channels in collecting tubule, F569

effects on mesotocin and vasopressin secretion by brushtail possum marsupial, R1319

swelling-activated K<sup>+</sup> and Cl<sup>-</sup> transport in lamprey erythrocytes, R590

Osmolytes

organic, in regulation of renal cell glycerophosphocholine synthesis, C402 organic, renal, response to acute water load or water deprivation, F227

Osmoreceptors

central

in brain, role in water intake and hypothalamoneurohypophysial activity in rat, R651

vs. cloacal, role in colonic motility, urine reflux, and osmoregulation in fowl, R690

splanchnic, and neural signaling of gastric water absorption, R236

Osmoregulation

see also Cell volume regulation; Tonicity

cAMP-activated chloride channels, in dogfish rectal gland, C70

of chloride transport, anion-exchanger mediated, in *Xenopus* oocytes, C201

in fowl, colonic motility and urine reflux, effects of urine flow rate and osmolality, R690

interaction with thermoregulatory system, R414

intrahypothalamic release of oxytocin and vasopressin, functional consequences and controversies (review), E537

maternal hyposmolality, fetal urine flow, R358

vasopressin response to sustained hypovolemia, role of adaptive resetting of volume control mechanism, R349

Osmosensors

splanchnic, and neural signaling of gastric water absorption, R236 Osmosis

Hulett's theory vs. Lewis's teachings, H2133

and reflection coefficient, student laboratory, S10

Osmotic forces

see also Tonicity

transport system activation by, mechanisms in smooth-muscle vs. Chinese hamster ovary cells, C147

Osmotic regulation

molecular basis (Cannon lecture), F983

Osmotic transients

and skeletal muscle capillary permeability, H184

Osteoblasts, Osteocytes, see under Bone

Osteocalcin

mRNA expression after mechanical stimulation, E318

Osteomalacia

in X-linked hypophosphatemia, murine *Hyp* osteoblast phenotype abnormalities (review), F357

Osteopetrotic rat

mineral homeostasis in, E312

Osteopontin

phosphorylation defects in murine Hyp homologue of X-linked hypophosphatemia, F357

Ouabain

effect on membrane conductance and apical membrane potential in Aplysia intestine, R1050

and palmitoyl-L-carnitine, inhibition of Na/K pump current in ventricular cells, H1027

and proton transport through sodiumpotassium pump, C590

Ovaries

granulosa cells, insulin-like growth factor binding protein-3 effects, E1057

Oviduct

cAMP- vs. Ca<sup>2+</sup>-regulated chloride conductance, in normal vs. cystic fibrosis mice, C708

22-Oxacalcitriol

therapeutic use in X-linked hypophosphatemia, F357

Oxalate

effects on chloride and fluid transport in proximal tubule, F204

Oxidant stress

see also Reactive oxygen species in asbestos-induced lung injury, relation to DNA strand breaks, L471

in bronchial epithelial cells, effects of prior cytokine-induced superoxide dismutase, L71

Ca<sup>2+</sup> signaling inhibition by, modulation by glutathione peroxidase reductant substrate, H278

cystine transport and glutathione regulation in alveolar type II cells, L21

from  $H_2O_2$ , DNA injury and repair after, in tracheal epithelial vs. mesothelial cells, L832

interleukin-1-induced, protective effects of prior IL-1, L12

lung injury from, pH-sensitive liposomes for antioxidant delivery to type II cells, L374

survival time response to 100% oxygen, effects of aging on, L539 **Oxidants** 

see also Hydrogen peroxide

effects on permeability and repair of human tracheal epithelium, L284

Oxidation

of chylomicrons, effects on rate and site of clearance, G709

of substrates, use of [13C]bicarbonate infusion for measuring, E1123

**Oxidation reactions** 

of peroxynitrite (review), L699

Oxidative cell injury

proximal tubular epithelial cell injury from  $H_2O_2$ 

role of lipid peroxidation, F30

Oxidative enzymes

mitochondrial, in newborn proximal convoluted tubule, developmental regulation by thyroid hormones, F634

Oxidative metabolism

myocardial, from  $\alpha$ -adrenergic stimulation, effects of left ventricular hypertrophy, H1202

in small intestine

effects of glutamine, G879

in enterocytes, effects of graded ischemia, G116

vs. glycolytic, and compartmentation, in vascular smooth muscle, C628

Oxidative phosphorylation

forearm power output, relation to Gibbs free energy of ATP hydrolysis, C1474

Oxidative stress

see also Reactive oxygen species and antioxidant defenses, in land snail, R1386

in cardiomyocytes, role of intracellular copper- and zinc-containing superoxide dismutase, H1115

in coronary venular endothelial cells, effects on glutathione and on HSP 70 mRNA and protein, H1651

differential sensitivity of membrane inner and outer leaflets, G260

from menadione,  $\alpha$ -ketoacids as  $H_2O_2$ scavengers, C227

hepatic, quantifying liver injury from, G471

role in pancreatitis pathophysiology, G592

2-Oxoglutarate dehydrogenase

and propionyl-L-carnitine effects on ischemic cardiac contractile dysfunction, H441

Oxotremorine-m

effects on glucose-induced pancreatic insulin release, E336

Oxygen

see also Hyperoxia; Hypoxia

capillary supply capacity, high and low O<sub>2</sub> inflow networks, H1215

cardiomyccyte cytosolic level, measurements within single cell, H2561 consumption

in dystrophic hamster, thyroxine effects on, R779

effects of NO inhibition, R1533 in fish white muscle, during hypoxia and recovery, R1178

in marsupial skeletal muscle, vasoconstrictor effects on, R1217

non-role in endotoxin-induced cardiac contractile dysfunction, H2460

postprandial, role of skeletal muscle vs. splanchnic tissue in men vs. women, E433

delivery to tissues, and microvascular hemodynamics, H802

in septic shock, effects of nitric oxide synthase inhibitors, H2017

determinants of maximal uptake during single-leg knee extension exercise, H1453

effect of dose on surfactant protein mRNA expression and phospholipid production in fetal lung cells, L818

extraction, in endotoxic shock, effects of antioxidant U-74006F, H1847

low-Po<sub>2</sub>-stimulated glucose production, role of pancreatic hormones, E1174 myocardial consumption

effects of progressively higher workloads, H1891

energy saved by quick release at peak contraction, cross-bridge model analysis, H2544

relation to cGMP level and effects of thyroxine-induced hypertrophy, H686

$$\label{eq:myocardial} \begin{split} & \text{myocardial, critical intracellular Po}_2 \\ & \text{level, and capillary-to-cell vs. cytosol-to-mitochondrial O}_2 \\ & \text{gradients,} \\ & \text{H1675} \end{split}$$

regulatory effect on cytochrome-c oxidase, L918

sensitivity of carotid body glomus cell, developmental changes, L801 tissue supplies in acute plus chronic hy-

poxemia, H974 transarterial wall gradients at carotid bifurcation, H155

uptake, arterial saturation, and consumption in hypoxic fetus, placenta, and uterus, R303

Oxygen radicals

see also Reactive oxygen species; Peroxides; Oxidative stress

effects on cardiomyocytes, role of intracellular copper- and zinc-containing superoxide dismutase, H1115

and leukotriene C<sub>4</sub> production during postischemic reoxygenation in brain, H1249

role in canine reperfusion fibrillation, H295

role in pulse-pressure inhibition of acetylcholine-induced vascular relaxation, H359

role in smoking-induced platelet hyperactivity, H678

site of, in cyclooxygenase-mediated, bradykinin-induced cerebral vasodilation, H458

Oxygen tension

arteriolar vs. venular and systemic vs. local microvascular, H802

Oxygen transport

mathematical model, teaching aid adaptable to extracorporeal oxygenation, S32

Oxygenation

see also Arterial oxygen saturation after anoxia

cardiomyocyte hypercontracture from, protection by Na<sup>+</sup>/H<sup>+</sup> exchange inhibition, H1531

effects on [Ca<sup>2+</sup>]<sub>i</sub>, vs. anoxia, hypoxia, and metabolic inhibition, H1045

after hypoxia

delayed cardiomyocyte relaxation, effects of cGMP, H2396

effect on eicosanoid synthesis in cardiomyocytes, H308

effects on endothelial cell functions and integrity, H749

and hypoxic protection against H<sub>2</sub>O<sub>2</sub>induced myocardial damage, H614 posthypoxic, effects on *E. coli*-induced

TNF-α expression, G311 posthypoxic, energy metabolism in fish white muscle during, R1178

Oxytocin

see also Mesotocin

intrahypothalamic release, functional consequences and controversies (review), E537

plasma levels after hypertonic saline, mannitol, or both, effects on water intake in rat, R651

role in renal natriuretic response to hypertonic and isotonic saline infusions, R634

Oxytocin receptors

in astroglia, agonist-induced downregulation, C413

Ozone

effects on  $[Ca^{2+}]_i$  in tracheal epithelium and mechanisms involved, L558 effects on mast cells, L902

P

P region of K<sup>+</sup> channels (review), C535

**Pacemakers** 

jejunal ectopic, after transection, relation to transit, G959

Pacing, see Heart rate, pacing PAH, see p-Aminohippuric acid clearance

Palatability, see Food intake Palmitate

effects of fasting-refeeding cycling on tissue stores, R498

uptake by cardiomyocytes, roles of albumin, facilitation, and endothelial cell synergism, H1659

Palmitoleate

effects of fasting-refeeding cycling on tissue stores, R498

Palmitoylcarnitine

effects on ventricular myocytes,  $[Na^+]_i$  increase and transient inward current, H2405

Palmitoyl-L-carnitine

inhibition of Na/K pump current in ventricular cells, H1027

Pancreas

A cells, somatostatin effects on, in hamster glucagonoma cells, E40 acinar cells

desensitized, phosphoinositide synthesis in, G1043

effects of supramaximal secretagogue stimulation on cytoskeleton, G328

guanosine 3',5'-cyclic monophosphate formation, Ca<sup>2+</sup> effects on, G900 proliferation after enterectomy, role of somatostatin and adenylyl cyclase,

E343

#### Pancreas (continued)

acini

cholecystokinin in, activation of mitogen-activated protein kinase kinase, G1060

cholecystokinin insensitivity in genetically diabetic Otsuka Long-Evans Tokushima Fatty rat, E531

increased expression of sulfated glycoprotein gp300 and altered morphology in CFTR(-/-) mice, G717

B cells, secretory response to D-glucose vs. nonglucidic nutrient secretagogues, C611

B-cells, starvation-impaired responsiveness to glucose, protective effects of succinic acid monomethyl ester, E580

cancer of, stimulation by gastrin, R135 β-cells

insulin secretion after hyperglycemia, in vitro vs. in vivo, role of muscarinic activation, R475

ion channels in, effects of hypoglycemic agent A-4166 on, E185

mathematical model of glucose metabolism and insulin release, glucokinase as glucosensor, E775

responsiveness to glucose in differing physiological states, E21

digestive functions, vagovagal reflex control (review), G1

duct cells, protein kinase C regulation of CFTR currents, C823

endocrine function, (1S,3R)-1-aminocyclopentane,1,3,-dicarboxylic acid effects on, R1026

exocrine secretions

mechanisms regulating periodicity, G251

nerve-stimulated, effects of serotonin on, G339

roles of somatostatin, acetylcholine, and cholecystokinin in regulation, E349

goblet cells, degranulation, neurohumoral control, G24

hormone secretion, role of nucleus raphe obscurus, E1128

insufficiency, gastric emptying of oil and aqueous meal components, effects of posture, G925

insulin release, bradykinin effects on, E1027

islets, pulsatile insulin secretion, correlation with [Ca<sup>2+</sup>]<sub>i</sub> oscillations, E282

islets, pulsatile insulin secretion, modeling analysis of possible mechanisms, C780

luminal proteases, role in prolactase processing and in postweaning lactase decline, G41

migration inhibitory factor-related proteins MRP8 and MRP14 in pancreatic cell lines, C1241

norepinephrine metabolism and proneness to diet-induced obesity, R389

Pancreatic polypeptide role in vagovagal reflex control of diges-

tion, G1

Pancreatic polypeptide receptors on hepatic microsomes, solubilization and identification, G215

#### **Pancreatitis**

and effects of supramaximal secretagogue stimulation on acinar cell cytoskeleton, G328

pathophysiology, ATP and glutathione decrease, role in zymogen activation, G592

#### Papillary muscle

contraction, effects on pressure-area relations of vascular segments within the muscle, model for, H2531

Paracellular pathway

within epithelial barrier, and transepithelial resistance response to tumor necrosis factor-α, F315

#### Parametrial artery

blood flow velocity, sex hormone effects on in pregnancy, R614

**Paraplegics** 

hemodynamic responses to vasopressin during  $V_1$  receptor blockade, R156

#### Parasympathetic nerves

tracheal, acetylcholine release from, β-adrenoceptor effects on, L950

Parasympathetic nervous system

in control of heart rate, changes in left ventricular dysfunction and heart failure, R310

dorsal motor nucleus of vagus, integration of vagal and spinal input from GI tract, G780

reflex salivation from, effects of subthreshold sympathetic stimulation, R1188

role in glucose homeostasis after hyperglycemia, R475

role in heart rate control in complete vs. incomplete quadriplegia, H2239

role of vasoactive intestinal polypeptide in vagally induced tachycardia, H1939

salivation and vasodilation from effects of clonidine and yohimbine, R1196

reflex submandibular, role of chorda tympani afferents, R438

vagal control of heart rate, effects of Met-enkephalin-Arg-Phe, H848

## Parathyroid gland

hyperparathyroidism from sustained intravenous neutral phosphate loading, F802

#### Parathyroid hormone

central actions on blood calcium and hypothalamic ventromedial nucleus, R21

circulating levels in osteopetrotic rat, E312

cytosolic calcium rise from, in proximal tubule cells, mechanisms, F330

effects on cyclic adenosine 5'-diphosphate-ribose synthesis by opossum kidney epithelial cells, C741

effects on proximal tubule  $Na-P_i$  cotransporter, F784

phosphaturia from, role of renal nerve and prostaglandins in phosphatedeprived rat, R731

Parathyroid hormone receptors renal, coordinate regulation with Na-P<sub>i</sub> cotransporter, F1017

Parathyroid hormone-related peptide pro sequence removal by furin, E832

#### Parenteral nutrition

n-3 fatty acid based lipids, and arachidonic vs. eicosapentaenoic acid effects in pulmonary hypertension, H2252

R- $\beta$ -hydroxypentanoate and  $\beta$ -ketopentanoate metabolism and toleration, E446

ketone body precursors as potential nutrients, metabolism in pigs, E660 Parietal cells, see Stomach, parietal

# cells Parturition, see Birth; Newborn

phosphorylation, during acetylcholineinduced tracheal smooth muscle contraction, C563

# Pedagogical learning

vs. andragogical learning, S66

#### Penile erection

Paxillin

dysfunction with aging, role of declining penile NO synthesis, H467

# Pentagastrin

gastric acid secretion from, inhibitory effect of intestinal acid, G286

# R-1,3-Pentanediol metabolites

R-β-hydroxypentanoate and β-ketopentanoate metabolism and toleration, E446

## Pentoxifylline

effects on pulmonary neutrophil kinetics, L27

# Pepsinogen

chief cell secretion, effects of nonsteroidal anti-inflammatory drugs, G968

Peptide histidine-isoleucine amide pathways mediating smooth muscle relaxation, C171

#### Peptide YFLLRNP

effects on [Ca<sup>2+</sup>]; transients in endothelial cells, C36

# Peptide YY

effects on renal function in normal humans, F754

intestinal trophic actions and ontogeny of gene expression, G71

microinjection into brain stem nuclei, induction of vagal stimulation of gastric acid secretion, G943

# Peptides

H<sup>+</sup>-dependent transport, in MDCK cells, F391

# Perfusion, see Blood flow

Perfusion pressure

effects on papillary muscle diastolic stress-strain relations, H945 renal, effects on regional renal blood flow, F404

#### Pericardial pressure

effects on coronary capacitance and coronary and systemic hemodynamics, H1593

#### Perinatal period

phenobarbital exposure, effects on ageand sex-specific growth hormone profiles regulating monooxygenases, E439

#### Perindopril

effects on sarcoplasmic reticulum calcium pump in cardiomyopathic hamster, H1947

#### Peripheral circulation

of cat hindquarters, responses to angiotensin peptides, H2418 Peripheral nerves

hyperglycemia, blood-nerve barrier permeability, and mast cell degranulation, H740

injury, calcitonin gene-related peptide accumulation and activity, H584

Peripheral nervous system

role in glucose uptake after N-methyl-Daspartate intracerebrally, R492

Peripheral resistance, see Total peripheral resistance

Peripheral vascular disease adaptation to arterial insufficiency and effect of exercise training, H125,

Peripheral vascular resistance, see Vascular resistance

Peristalsis

see also Colon, motility esophageal, secondary, aging effects on,

G772 Peritoneum

macrophages, cyclooxygenase constitutive and inducible isoforms in, vs. alveolar macrophages, L294

Peritonitis

hemodynamic effects of fluids and catecholamines, H692

Permeability

see also Barrier function

of basolateral proximal convoluted tubule, for taurine, hypotonicity effects, F595

blood-brain barrier, Na-K-Cl cotransport and effects of astrocytes on, C747

of blood-brain barrier, to glucose and ketone bodies during starvation,

of blood-nerve barrier, relation to hyperglycemia and mast cell degranulation, H740

of capillaries, seasonal variations in hydraulic conductivity and volume status in frogs, R468

capillary

caveolae-mediated, inhibition by Nethylmaleimide, H48

nitric oxide and capillary hydraulic conductivity, H1856 platelet-activating factor effects on,

and thromboxane A2, H1954 to proteins, effects of atrial natriuretic

peptide on, H1139 of coronary endothelial cells, early effects of reducing energy reserves,

H1462

of epithelial cells, regulation by tumor necrosis factor-α, role of cAMP and protein kinase A, F315

of erythrocyte membrane, to ammonia, study by saturation transfer nuclear magnetic resonance, C686

of gastric mucosa, and ontogeny of gastric mast cell degranulation, G121

of glomerular basement membrane, glomerular handling of circulating glycosylated albumin, F913

glomerular size selectivity, heterogeneous vs. conventional capillary network model, F972

of intestinal epithelial tight junctions effects of enteropathogenic E. coli, G374 effects of nitric oxide on, G361

ionic, role in histone-induced epithelial damage, C1114

of mesenteric microvessels, histamineinduced, and actin cytoskeleton changes, H316

microvascular

effects of protein tyrosine kinase and platelet-activating factor, H399 from thromboxane A2 receptor activation, R366

histamine-induced, and endothelial actin cytoskeleton changes, H316

oxidized LDL-induced albumin leakage in postcapillary venules and modulation by NO, H1643

substance P-increased, role of nitric oxide and neurokinin receptors,

of microvascular endothelium, LDL transport across, solvent drag and sieving, H1982

multifunctional transporter models: lessons from GLUTs (review), C1077 paracellular, cervical cell nucleotide re-

ceptors with opposing effects, C1215 pulmonary, effects of hepatic ischemiareperfusion, role of xanthine oxidase, G988

relation to rectification of CFTR Cl- current in epithelial and cardiac isoforms, C636

of skeletal muscle capillaries, to small solutes, H184

of trabecular meshwork cells of eye, role of sodium-potassium-chloride cotransport, C1067

vascular endothelial, tumor necrosis factor-a effects on, role of cAMP levels, C1104

of vascular endothelium, and shear stress effects on hydraulic conductivity, H535

vascular, from NO synthase inhibition by endogenous NG, NG'-dimethyl-Larginine, H2224

vascular, pertussis toxin disruption of pulmonary artery endothelial cell barrier function, L926

Permeability transition

mitochondrial, and hepatocyte death by anoxia or electron transport inhibition, C676

Peroxidation

differential sensitivity of membrane inner and outer leaflets, G260

of lipids, role in proximal tubular epithelial cell injury from H2O2, F30

see also Hydrogen peroxide; Superoxide radical; Reactive oxygen species retinal vasoconstriction from and role of

thromboxane, H628

role in smoking-induced platelet hyperactivity, H678

tert-butyl hydroperoxide, Ca2+ signaling inhibition by, modulation by glutathione peroxidase reductant substrate, H278

Peroxynitrite

chemistry (review), L699 pulmonary significance (editorial), L697

Peroxynitrous acid

oxidation reactions and activated isomers (review), L699

Peroxyvanadium compounds

insulin-like effects in vivo, E60

Pertussis toxin

disruption of pulmonary artery endothelial cell barrier function, mechanisms, L926

effects on phenylalanine-induced intestinal cholecystokinin secretion, G90

duodenal, effects on interdigestive migrating myoelectric complex, G146

endosomal, effects on receptor-mediated albumin endocytosis in proximal tubule cells, F899

extracellular

effects on acetylcholine-induced nonselective smooth muscle cation channels, C162

effects on hypercapnia-stimulated cerebrovascular prostaglandin synthe-

effects on muscle branched-chain ketoacid dehydrogenase, C1395

role in regulation of phosphoenolpyruvate carboxykinase isoenzyme expression, C449

interstitial, role in gastric mucosal oxyntic cell pHi, G496

intracellular

F671

acidic, beneficial effects in cardiac ischemia-reperfusion, role of Na<sup>+</sup>/H<sup>+</sup> exchange inhibition, H1510, H1531

acidosis effects on skeletal muscle [Ca2+];-force relations, C55

AE1 anion exchanger variant NH2terminal cytoplasmic domains in chicken, F503

effects on Ca2+-activated Cl- channels in lacrimal gland acinar cells, C647 effects on cloned rat kidney outer me-

dulla K+ channel, C1173 effects on tracheal smooth muscle voltage-dependent Ca2+ channels, role in CO2 regulation of airway

tone. L642 hypercapnia effects on, in brain and skeletal muscle of two lizard species,

input pressure effects on, in anoxic and/or acidotic turtle heart, R683

in gastric mucosal oxyntic cell, role of interstitial buffering, G496 in kidney cells, glucose effects on,

muscarinic-activated changes, in naive vs. fully differentiated avian salt gland cells, C944

osmotically induced changes, mediators in smooth-muscle vs. Chinese hamster ovary cells, C147

in proximal tubule, acid extrusion and CO<sub>2</sub>/HCO<sub>3</sub> alkalinization, F179,

regulatory mechanisms in macrophage J774A.1 murine cells, C210 response to progressively lower myo-

cardial Po<sub>2</sub>, H1675

role in hypercapnia-stimulated cerebrovascular prostaglandin synthesis. H591

role in hypoxic and hypercapnic airway smooth muscle relaxation, L207

#### pH (continued)

role in myocardial ischemic preconditioning, H935

role in Na+/H+ exchange and anion exchanger AE2 activation in Xenopus oocytes, C201

sodium/hydrogen exchanger isoforms (review), C283

in thin ascending limb of Henle's loop, role of amiloride-sensitive Na+/H+ antiporter, F410

in vascular smooth muscle, control mechanisms and relation to tension,

in ventricular myocytes, angiotensinconverting enzyme inhibitor effects on. C366

myofilament sensitivity to, role of troponin I isoforms, C323

Phagocytosis

of bacteria, by alveolar macrophages, effects of surfactant protein A and endotoxin, alone and combined, L144

Pharmacomechanical coupling in arterial smooth muscle excitation-

contraction, H74 Pharyngeal bolus flow

during swallowing, aging effects on, G389

Pharynx, see Nasopharynx; Swallowing

Phase shifts

orthodromic, and reentrainment of human circadian rhythms, R528

Phenobarbital

neonatal exposure, effects on age- and sex-specific growth hormone profiles regulating monooxygenases, E439

Phenylalanine

proteolytic release from muscle, effects of local epinephrine infusion, E55 **D-Phenylalanine** 

and intestinal cholecystokinin secretion, G90

L-Phenylalanine

mechanisms of intestinal cholecystokinin secretion, role of calcium, G90

Phenylephrine

effects on ventral medullary surface, R324

endotoxin-induced vascular hyporeactivity, role of nitric oxide, G177 and excitation-contraction coupling

mechanisms in rat tail artery, H74 Phorbol 12,13-dibutyrate

coronary artery PKC depletion by, effect of adenosine receptors, H271

Phosphatase, see Phosphoprotein phosphatase

Phosphatase inhibitors effects on Cl- channels in proximal tubule epithelial cells, F323

**Phosphates** 

see also Sodium-phosphate symport dietary, adaptation of Na+-P; trans-

porter to deficiency, effects of hypophosphatemia, G917

energy-rich, in slow vs. fast human skeletal muscle, C869

high-energy

and aerobic lactate production in vascular smooth muscle metabolism, H713

input pressure effects on, in anoxic and/or acidotic turtle heart, R683 in ischemic right ventricle, effects of

inotropic stimulation, H1821 myocardial, effects of transient adenosine vs. ischemic preconditioning, H1149

high-energy and inorganic

myocardial, responses to progressively higher workloads, H1891

inorganic cellular levels and membrane transport in renal tubular cells, F375

dietary deprivation, and renal nerveprostaglandin interaction during parathyroid hormone-induced phosphaturia, R731

dietary, regulation of renal Na-Pi cotransporter, F626

dietary restriction, effects on renal Na+-Pi cotransporter in X-linked Hyp mice, F1062

reabsorption in proximal tubule, parathyroid effects on Na-Pi cotransporter, F784

and sodium entry into distal convoluted tubule cells, F89

transport in flounder proximal tubule, somatolactin, growth hormone, and prolactin effects on, R577

renal mitochondrial transport, postischemic thyroxin effects on, F651

sodium-dependent transport

inhibition by epidermal growth factor in opossum kidney epithelial cells, F309

in proximal tubule, defects in murine X-linked hypophosphatemia (review), F357

sustained intravenous dose, renal metabolic aklalosis and hyperparathyroidism from, F802

Phosphatidic acid

role in 1,2-diacylglycerol formation in mesangial cells, F997

Phosphatidylcholine

see also Surfactant

angiotensin II-mediated hydrolysis, cGMP effects on, C376

lovastatin effects on hepatic metabolism in rat, G242

NaCl-induced catabolism in renal cells, enzymatic basis, C402

saturated, clearance from lung, L636 uptake and metabolism by alveolar macrophages, L772

Phosphatidylethanolamine

physicochemical properties, role in ischemia-induced sarcolemmal damage,

Phosphatidylinositol 3-kinase

activation defect in obesity, role in insulin resistance, E604

needed in hepatocyte growth factor-mediated chemotaxis and tubulogenesis, F1211

in skeletal muscle, effects of contraction on, E987

Phosphaturia

from parathyroid hormone, role of renal nerve and prostaglandins in phosphate-deprived rat, R731

Phosphocholine cytidylyltransferase lovastatin effects on in rat hepatocytes, G242

Phosphocreatine

intracellular, response to progressively lower myocardial Po2, H1675

in marine fish gill, role in ion transport and energy metabolism, R1003 and MgADP effects on muscle force and

shortening velocity, C480 and oxidative vs. glycolytic metabolism in carotid artery smooth muscle, C628

Phosphodiesterase inhibitor

effects on shear-induced increase in hydraulic conductivity, H535

**Phosphodiesterases** 

cAMP phosphodiesterase, protein kinase C-stimulated activation in collecting tubules, F808

cyclic nucleotide, role in TNF-α effects on endothelial barrier function, C1104

Phosphoenolpyruvate carboxykinase role in hypoxia-induced gluconeogenesis

inhibition in hepatocytes, E965 subcellular sites in gluconeogenic substrains of renal cell lines, C449

Phosphofructokinase

plus glucose-6-phosphatase, role in β-cell glucose-sensing, simulation analysis, E775

6-Phosphofructo-2-kinase/fructose-2,6-bisphosphatase

hepatic, glucagon-induced phosphorylation, inhibition by tolbutamide, E391

Phosphoinositide

synthesis in desensitized pancreatic acinar cells, G1043

Phosphoinositol pathway

role in acetylcholine potentiation of acetylcholine-induced K+ currents in atrial myocytes, H1322

Phospholamban

gene expression in pressure-overload cardiac hypertrophy, C252

Phospholipase C-linked receptors in airway smooth muscle cells (review),

Phospholipases

activation in neutrophils, roles of leukotriene B4 and extracellular Ca2+,

in early insulin stimulus-secretion coupling pathway, role of ATP-sensitive K channel, C181

role in hypercapnia-stimulated cerebrovascular prostaglandin synthesis. H591

role in neutrophil priming and lung injury after intestinal ischemia-reperfusion, G397

C and D, role in strain-induced fetal lung cell increase, L729 C

and gastrin-cholecystokinin-B receptors on J.RT3-T3.5 Jurkat cells,

role in endothelin effects on juxtaglomerular renin release, F39

role in epidermal growth factor inhibition of Na-Pi cotransport in opossum kidney cells, F309

smooth muscle stretch-activated, C458

and type A endothelin receptors in myometrial cells, E825

D

activation in lacrimal gland acini, role of cholinergic receptors, protein kinase C, and Ca<sup>2+</sup>, C713

activation by serotonin in mesangial cells, F997

phosphatidylcholine-specific, angiotensin II activation, cGMP effects on, C376

role in osmotic regulation of phosphatidylcholine catabolism in renal cells, C402

# Phospholipids

see also Surfactant

and bile acid facilitation of protoporphyrin excretion, G754

lovastatin effects on hepatic metabolism in rat, G242

lysophosphatidic acid effects on cerebral circulation, H2048

metabolism, inhibition by cGMP, role in vasorelaxation, C376

of sarcolemma, role of physicochemical properties in ischemia-induced damage, H773

Phosphoprotein phosphatase

activation in ischemic preconditioning, H364

role in regulation of pineal cAMP and cGMP. E458

Phosphoramidon

effects on human lung fibroblast proliferation and chemotaxis, L278

Phosphorus

circulating levels in osteopetrotic rat, E312

intracellular, in skeletal muscle contracture, C317

Phosphorylase

b to a transformation, role in muscle glycogenolysis during exercise, E127

Phosphorylation

of actin-membrane attachment proteins, and tracheal smooth muscle contraction, C563

of dense-plaque proteins, during tracheal smooth muscle contraction, C563

of myosin

and ADP-induced Ca<sup>2+</sup>-insensitive smooth muscle contraction, C21 effects on force development in skel-

etal muscle, C596 of phospholamban molecule, role in ven-

tricular myocyte relaxation, H703 protein kinase A-mediated, effects on delayed rectifier K<sup>+</sup> current in vascular smooth muscle, H926

Phosphotransferase

in regulation of delayed rectifier K<sup>+</sup> channels in vascular smooth muscle, H926

Photoperiodicity

effects on seasonal changes in sex hormone-binding globulin and thyroxine plasma levels in male bats, R1303

melatonin endogenous nocturnal production rates and pharmacokinetics of exogenous doses in pony mares, R1236 neuropeptide Y effects on food intake during short and long photoperiods in sparrows, R1418

of white fat pad lipolysis in hamster, differential sympathetic innervation of internal vs. external pads, R744

Phrenic ampulla

mechanics of emptying, G320

Phrenic nerve

and central respiratory drive effects on barosensitivity of rostral ventrolateral medulla, R909

Physical training, see Exercise training

Pial vasculature, see under Brain Pituitary gland

see also Hypothalamic-pituitary-adrenal axis

adenohypophysial gonadotrope cells, secretogranin II release from, E145 angiotensin II recentor AT,, and AT,

angiotensin II receptor AT<sub>1A</sub> and AT<sub>1B</sub> subtypes, F220

corticotrophs, how many glucocorticoidsensitive pools of releasable ACTH, E85

gonadotropin-releasing hormone levels after orchidectomy in rat, E685

growth hormone expression in fetus, regulation by thyroid and glucocorticoid hormones, E262

lactotroph cells, arachidonic acid effects on  $[Ca^{2+}]_i$  and prolactin release, E1215

somatotroph cells, growth hormone-releasing factor-stimulated Ca<sup>2+</sup> influx, E204

and triiodothyronine stimulation of renal epidermal growth factor, F128 uptake of thyroid hormones, effects of

furan fatty acid and indoxyl sulfate, E974

**Pituitary hormones** 

secretion by brushtail possum marsupial, effects of stressors on, R1319

Placenta

amino acid transport (review), C1321 angiotensin II pressor effects and clearance rate, vs. fetal rate, E237

fluid transfer across, effects of increasing maternal hyposmolality, R358 glutamine-glutamate exchange with fe-

tal liver, E705 hemodynamics, effects of sleep and nonlabor myometrial activity, H1734

nicrovillous membrane, lysine transport and y<sup>+</sup> system comparison with basal membrane, C755

oxygen, glucose, and lactate uptake, effects of hypoxemia, R303

Plasma membrane adenosinetriphosphatases, see P-Glycoprotein

Plasma proteins

capillary permeability to, effects of atrial natriuretic peptide on, H1139

Plasma volume

effects of thromboxane  $A_2$  receptor activation, R366

role in thirst attenuation during headout immersion in water, R583

Plasma volume expansion

gestational, role of volume-sensitive cardiopulmonary receptors, R736

Plasmalemma vesicles, noncoated, see Caveolae **Plasmids** 

as vector for gene transfer, by tracheal insufflation, L1052

as vector for gene transfer to salivary submandibular gland, G1074

Plasmin

effects on thrombin binding and platelet cytosolic [Ca<sup>2+</sup>]<sub>i</sub>, C958

Plasminogen activator inhibitor-1 elevation after hemorrhage, E1065

Plasminogen activators

in platelets, release by insulin, H117 urokinase type, receptor role in tumor cell mitogenesis and proteolysis, L972

Plasminogen system

characterization in L2 rat yolk sac carcinoma cell line, C442

Platelet aggregation

from cigarette smoking, role of hydrogen and lipid peroxides, H679 inhibition by endothelial cells, fibrin and

fibrinogen effects on, C520 potassium effects on, R825

Platelet-activating factor

actions on parietal sheet of renal glomerulus, F1053

effects on gastric acid secretion, G889 effects on neutrophil-glomerular endothelial cell interactions, F1

effects on vascular resistance and capillary permeability, role of thromboxane  $A_2$ , H1954

interactions with protein tyrosine kinase in microvessels, H399

role in oxidized chylomicron-induced leukocyte-endothelial cell adhesion, H2175

Platelet-derived growth factors
effects on endothelin-1 release by all

effects on endothelin-1 release by alveolar epithelial cells, L192

isoform-specific induction of low-density lipoprotein receptor gene, C1033 mitogenesis from, effects of lipoxygenase inhibitors, C604

PDGF-AB and -BB, cytokine-binding proteins in lung (review), L869

Platelets

leukocyte interactions, from NO synthase inhibition by endogenous N<sup>G</sup>, N<sup>G</sup>'-dimethyl-L-arginine, H2224

phospholipids from, possible role in intracranial posthemorrhagic vasoconstriction, H2048 plasmin effects on thrombin binding and

cytosolic [Ca<sup>2+</sup>]<sub>i</sub>, C958 plasminogen activators in, release by insulin, H117

Pleura

mesothelial cells, DNA injury and repair after H<sub>2</sub>O<sub>2</sub> exposure, vs. tracheal epithelial cells, L832

Pneumocytes, type II, see Alveolar cells, type II

Pneumonia

alveolar epithelial type I cell protein  ${\rm rTI}_{40}$  as marker, L181 changes in lung neutrophil kinetics from, pentoxifylline effects on, L27

Polyamines effects on glucose transport in enterocyte brush-border membrane vesicles, G416

Polymorphonuclear cells see also Neutrophils; Leukocytes Polymorphonuclear cells (continued)

chemokine mRMA expression in oxygeninjured lung, L826

Polysomes

heat-shock protein-70 from, and slowing of polypeptide elongation during skeletal muscle atrophy, C1369

# Polyunsaturated fatty acids, see Fatty acids, n-3 polyunsaturated

Pore models

for skeletal muscle capillary permeability, H184

Portal hypertension

peripheral vasodilation from, role of nitric oxide, G459

portal vein stenosis effects on cardiac β-adrenergic signal transduction, G410

#### Portal vein

amino acid levels, relation to hepatic alanine transport, R598

circulating oxidants in, quantifying liver injury from, G471

smooth muscle, changes in contractile function and ion channels in atherosclerosis, H2522

smooth muscle cells

Ca<sup>2+</sup>-activated Cl<sup>-</sup> current in, stimulation by Na<sup>+</sup>/Ca<sup>2+</sup> exchange, H1906

delayed rectifier K<sup>+</sup> current in, phosphorylation by protein kinase A, H926

stenosis, effects on cardiac  $\beta$ -adrenergic signal transduction, G410

vascular bed, hemodynamic effects of endotoxin shock, H1106

# Postischemic reperfusion, see Ischemia-reperfusion

Postpartum state

and atrial natriuretic peptide effects on kidney during pregnancy, F416

Postprandial metabolism

impaired adipose tissue triacylglycerol clearance in obesity, E588

Postprandial state

duodenal chyme transport patterns during, G700

#### Posture

effects on gastric emptying of nonnutrient liquid, G868 of oil and aqueous meal components in pancreatic insufficiency, G925

Potassium channels

see also **Sodium-potassium pump** adenosine 5'-triphosphate-dependent, non-role in myocardial hibernation,

H2294 adenosine 5'-triphosphate-sensitive in esophageal smooth muscle, muscarinic suppression, C877

in pancreatic β-cells, effects of hypoglycemic agent A-4166 on, E185

role in coronary microvascular response to ischemia, diabetes effects on, H1667

role in hypoxic protection against  $H_2O_2$ -induced myocardial damage, H614

role in insulin secretory response to phospholipase  $A_2$ , C181

role in ischemic preconditioning benefits on capillary no-reflow, H2063 role in modulating adrenergic coronary vasoconstriction, H1077

and sustained aortic contraction in prolonged hypoxia, role of endothelium, H1015

in arterial smooth muscle (review), C799 calcium-activated

in colon smooth muscle cells, role in colonic electrical and mechanical activity, C619

coupling to G proteins, effects on tracheal smooth muscle, L221

large-conductance, role in NO-mediated smooth muscle relaxation, L152

role in endothelin-3-induced vasopressin secretion, E467

calcium-dependent, in tracheal smooth muscle, upregulation by protein kinase  $G\text{-}\mathrm{I}\alpha$ , L1057

of cortical collecting duct principal cell, Ca<sup>2+</sup>/calmodulin-dependent protein kinase II effects on, F211

and cyclopiazonic acid-augmented Ca<sup>2+</sup> entry into endothelial cells, H138

high-conductance, in cortical collecting tubule, effect of hyposmolarity on, F569

inward rectifying, human homologue (HHBIRK1) cloned from heart and brain, H506

inwardly rectifying and ATP-sensitive ROMK isoforms, distribution in nephron, F1132

ROMK1, distribution in distal nephron, F1124

ion conduction and inactivation in, molecular determinants (review), C535 luminal, in proximal convoluted tubule,

role in diffusional potassium reabsorption, F778 in portal vein smooth muscle cell,

changes in atherosclerosis, H2522 renal

in rat kidney outer medulla, sensitivity to  $pH_i$ , C1173 ROMK2, ion selectivity, kinetics, ef-

fects of blockers, C389 in renal tubules, blockade with barium,

in renal tubules, blockade with barium, effects on tubuloglomerular feedback, F960

role in esophageal nonadrenergic noncholinergic inhibitory junction potentials, G831

voltage-dependent delayed rectifier, in colon smooth muscle cells, role in colonic electrical activity, C619

Potassium conductances

activation by Ca<sup>2+</sup> vs. cAMP in intestinal goblet cells, C1503

inwardly rectifying

in apical membrane of retinal pigment epithelium, C1164

modulation in developing skeletal muscle, C490

role in regulatory volume decrease mechanisms in nonpigmented ciliary epithelial cells, C721

role in retinal pigment epithelium volume regulation, C89

#### **Potassium currents**

acetylcholine-induced

in atrial myocytes, potentiation by acetylcholine, H1313

in atrial myocytes, potentiation by acetylcholine, mechanism, and nature of K<sup>+</sup> currents, H1322

delayed rectifier

neuronal, angiotensin II type 2 receptor fragment effects on, C278 in vascular smooth muscle, phosphor-

ylation by protein kinase A, H926 in ventricular wall, regional differences in components, H604

inwardly rectifying

in endocardial endothelial cells, H2036 role in changes in excitability of ventricular muscle cells, model study, H1181

inwardly rectifying and transient outward, in ventricular myocytes, changes during culture, C1002

transient and steady-state, in ventricular myocytes, effects of thyroid status, H576

transient outward

and action potential configuration, in epicardium, developmental changes, H2513

in esophageal circular muscle, G979 Trypanosoma cruzi effects on, H1258

transient outward and inward rectifying, in atrial myocytes, age-related changes, H1335

in ventricular myocytes, effects of extracellular magnesium, H2321

voltage-gated, in pulmonary artery myocytes, regulation by cytochrome P-450, C259

# Potassium ion

see also Hydrogen-potassium ATPase; Sodium-potassium pump; Sodium-potassium-chloride cotransport

cardiovascular protective mechanisms (review), R825

cerebrospinal fluid levels, and hypertension in DOCA rats, H646

contractions from, in bronchial rings, effects of  ${\rm CO}_2$  concentration, L642 cytosolic, in glomerular mesangial cells,

effects of NO, F1081 effects on pH<sub>i</sub> in vascular smooth muscle, C580

reabsorption in proximal convoluted tubule, role of diffusion, F778

renal excretion after hypertonic and isotonic saline, R634

and sodium ion, effects on contractility, implications for fatigue, C1528 swelling-activated transport in lamprey

erythrocytes, R590 and taurine permeability of proximal

tubule basolateral membrane, F595

tissue uptake rate, and sodium pump energetics in mouse, rat, rabbit, sheep, and cattle liver and kidney, R641

transport in cortical collecting duct, effects of basolateral metabolic acidosis, F490

transport mechanisms, in mouse erythrocytes, C894

urinary excretion, atrial natriuretic peptide effects on, changes in pregnancy, F416

# Potassium-ATPase

ouabain-sensitive, in rat nephron, distribution and properties, F1141

#### Potassium-chloride cotransport, in erythrocytes

in mouse, C894

swelling-activated, role of creatine kinase, C660

urea-activated, in humans, C1018 urea-activated, significance for swellingactivated transport, C1026

Potassiun currents

inward-rectifying, role in somatostatin effects on thyroid-stimulating hormone-secreting cells, E558

Prednisone

effects on muscle and whole body protein metabolism in Duchenne and Becker muscular dystrophy, E67

#### Pregnancy, see Gestation; Embryo; Fetus: Placenta

Premature birth

retinopathy of, peroxide-induced vasoconstriction and role of thromboxane, H628

Preproenkephalin

mRNA expression in cholestatic liver, G346

Presbyesophagus, G772

Pressure diuresis and natriuresis response

decrease in hyperthyroidism, role of renin-angiotensin system, E897

Pressure natriuresis

and salt-induced hypertension in Dahl rat, role of NO, H2375

Pressure-flow relations

role of calcium channels in vascular waterfall, H371

Pressure-induced natriuresis

mechanisms: intrarenal regional blood flow and renal perfusion pressure, F404

Proadrenocorticotropic hormone effects on cortisol response to ACTH, in

adult vs. fetal adrenal cells, E623

Problem-based learning, S75

Procollagen type I

ontogeny of synthesis sites during human fetal lung development, L309 Progesterone

effects on gastric emptying and gastrointestinal transit, G171

effects on liver mitchondria: role in acute fatty liver of pregnancy, G107 effects on vasopressin antidiuresis in

females, R951 Proglucagon

gene expression, somatostatin effects on. in hamster glucagonoma cells, E40

Prohormone processing

furin role in proparathyroid hormonerelated peptide processing, E832

Prolactin

effects on gastric mucin and acid secretion and expression in intestinal intraepithelial lymphocytes, G431

effects on sodium-taurocholate cotransport in hepatocyte basolateral membrane, G11

effects on transepithelial Pi transport in flounder proximal tubule, R577

in hormone-induced differentiation of Na+ transport across larval bullfrog skin, C218

release from lactotrophs, effects of arachidonic acid, E1215

serum levels, secretagogue-induced changes, effects of cold exposure on, E758

Prolactin binding proteins

isolation from intestinal and breast cancer cell lines, G431

Prolactin receptor

transcripts and isoforms in gastrointestinal cell lines, G431

Proline transport

across renal brush-border membrane, role of protein kinases, F155

Pro-opiomelanocortin

effects on cortisol response to ACTH, in adult vs. fetal adrenal cells, E623

Propionic acidemia

urinary markers after R-1,3-pentanediol infusion, E446

Propionyl-L-carnitine

effects on myocyte postinfarction contractility and calcium dynamics, H1702

effects on postischemic cardiac contractile dysfunction, H441

Propionyl-CoA

metabolism after R-1,3-pentanediol infusion, E446

Prostacyclin

see also Prostaglandins, PGI2 and PGE<sub>2</sub>

arterial wall production, effects of aging and endotoxin, H2288

production by endothelial cells grown on gelatin vs. Matrigel, H1613 release from endothelial cells under

varying oxygenation states, H749 Prostacyclin receptors

cerebral vasodilation from, indomethacin effects on, H1884

Prostaglandin endoperoxides

role in L-arginine analogue-induced coronary artery vasomotion, H1966

Prostaglandin receptors

in cortical collecting ducts, F145 PGE2, EP2 subtype in colonic crypt cells, properties, G270

Prostaglandins

see also Eicosanoids; Prostacyclin; **Prostanoids** 

cyclooxygenase constitutive and inducible isoforms in alveolar vs. peritoneal macrophages, L294

and cyclooxygenase-mediated, bradykinin-induced cerebral vasodilation,

hypothalamic production, suppression by cholestasis and effects on IL-1induced ACTH release, G404

interaction with renal nerve in phosphaturic response to parathyroid hormone in phosphate-deprived rat, R731

and monocyte chemoattractant protein 1 inhibition of vascular smooth muscle cell proliferation, H1021

non-role in gastric slow wave dysrhythmias of motion sickness, G539

in collecting duct lumen, effects on Na+ and water transport, F1093 and effects of hepatic hypoxia on E. coli-induced TNF-a expression,

effects on acetylcholine release in bronchial smooth muscle, L47

endothelin-1 effects on production in alveolar epithelial cells, L192

fetal levels after hypoxemia from reduced uterine blood flow vs. maternal N2 inhalation, F868

gastric synthesis after chronic aspirin doses, G134

release from cultured human pulmonary artery endothelial cells, endotoxin effects on, L239

role in oxidant-induced changes in sodium transport in middle ear epithelium, L390

synthesis during colitis, relation to electrolyte transport changes, G622

PGI<sub>2</sub> and PGE<sub>2</sub>, pial artery vasodilation from, in newborn, role of NO and cyclic nucleotides, H1436

release by endocardial vs. great vessel endothelial cells, H250

renal synthesis, role in 5,6-epoxyeicosatrienoic acid effects on ion transport in collecting duct, F931

role in alveolar formation, L56

role in gastroprotective effect of raphe pallidus kainic acid, G548

role in renal natriuretic response to extracellular volume expansion, R1442

role in renal sensory receptor activation, R164

synthesis by endothelial cells, effects of hypoxia and reoxygenation, H749 vasodilating, and hyperoxia, roles in regulating pulmonary perfusion,

Prostanoids

H1521

cerebral vasodilation from, indomethacin effects on, H1884

cerebrovascular, hypercapnia-induced, roles of intra- and extracellular pH and Ca2+ signaling, H591

effects on bronchial smooth muscle, L47 release from cultured human pulmonary artery endothelial cells, endotoxin effects on, L239

role in pulmonary vascular responses to histamine, H653

role in renal function, chloride role in variable renal response to cyclooxygenase inhibition, F561 synthesis, acute inhibition, effects on

renal hemodynamics and blood flow autoregulation, F468 vasopressin-induced, in male vs. female,

normotensive vs. DOCA, rat mesenteric vasculature, R40 **Protamine** 

effects on ischemia-induced angiogenesis of coronary collaterals, H720

Proteases

pancreatic, role in prolactase processing and in postweaning lactase decline,

Proteasomes

role in skeletal muscle proteolysis in cancer-associated cachexia, E996

Protein kinase inhibitors

effects on Cl- channels in proximal tubule epithelial cells, F323

effects on smooth muscle relaxation, C171 PKA inhibitor, effects on G protein inhibition of renal cortical Na-HCO3 cotransporter, F461

**Protein kinases** 

calcium/calmodulin-dependent protein kinase II

effects on collecting duct K<sup>+</sup> channels, F211

role in proline transport across renal brush-border membrane, F155

cAMP- and cGMP-dependent, role in smooth muscle relaxation, C171

cAMP-dependent, role in ventricular myocyte relaxation, H703

cGMP-dependent, and NO effects on cardiomyocyte calcium current, C45

cGMP-dependent, role in cGMP actions in ATP-stimulated resistance arteries, H1223

mitogen-activated, role in tracheal smooth muscle mitogenesis, L894

PKA

activation of chloride conductance in dogfish rectal gland, C70

activation of gastric Cl<sup>-</sup> channel, C191 effects on delayed rectifier K<sup>+</sup> current in vascular smooth muscle, H926

H-89 inhibitor, effects on forskolin stimulation of cardiac L-type calcium current, C651

role in tolbutamide modulation of hepatic 6-phosphofructo-2-kinase/ fructose-2,6-bisphosphatase, E391

role in tumor necrosis factor-α regulation of transepithelial permeability, F315

role in vasopressin downregulation of endothelin-1 binding in cortical collecting ducts, F385

and somatolactin-induced P<sub>i</sub> absorption in flounder proximal tubule, R577

PKA and PKC

non-role in nasal gland acinar cell [Ca<sup>2+</sup>]<sub>i</sub> signaling, L361

role in pertussis toxin disruption of pulmonary artery endothelial cell barrier function, L926

roles in angiotensin II-dependent, ANF-mediated transport inhibition in proximal nephron, F730

and Na<sup>+</sup>/H<sup>+</sup> exchanger recruitment, C434

PKC

activation by angiotensin II, cGMP effects on, C376

and angiotensin II induction of  $\alpha_1$ adrenergic receptors in aortic cells,
H1006

and angiotensin II inhibition of L-type  $Ca^{2+}$  current in sinoatrial node, H1053

effect on cytokine release from glomerulosa cells, E114

effects on Cl<sup>-</sup> channels in nonpigmented ciliary epithelial cells, C572 effects on Na-K-Cl cotransport in cere-

bral vascular endothelial cells, C747 effects on Na<sup>+</sup>/H<sup>+</sup> exchange in vascular smooth muscle in normo- vs. hy-

pertensive rats, C14 effects on Na<sup>+</sup>-K<sup>+</sup>-ATPase in proximal convoluted tubule, role of oxygen-

ation, C1277
effects on parathyroid hormone-induced rise in [Ca<sup>2+</sup>]<sub>i</sub> in proximal tubule cells, F330

effects on pH<sub>i</sub> in smooth-muscle vs. Chinese hamster ovary cells, C147

and loss of adenosine-induced negative inotropism in hyperexcited rabbits, H1037

and phospholipase D activation in lacrimal gland acini, C713

phosphorylation of astroglial oxytocin receptors, role in downregulation, C413

regulation of pancreatic duct CFTR currents, C823

role in acetylcholine potentiation of acetylcholine-induced K<sup>+</sup> currents in atrial myocytes, H1322

role in α-adrenergic-stimulated NaCl(K) cotransport in airway epithelial cells, L414

role in agonist-induced force enhancement in vascular smooth muscle cells. C1202

role in angiotensin II-stimulated glucose uptake by astroglia, E384

role in ATP regulation of lung surfactant secretion, L108

role in bile acid suppression of hepatocellular cAMP synthesis, G300

role in cAMP phosphodiesterase activation in renal collecting tubules, F808

role in hypoxic pulmonary vasoconstriction, H301

role in interferon-γ-induced MHC class II gene expression, C127 role in ischemic preconditioning in rat

heart, H426
role in lithium potentiation of angiotensin II-stimulated vasoconstric-

tensin II-stimulated vasoconstriction, H2009 role in nonsensitized and passively

sensitized bronchial smooth muscle, L966 role in oxidant effects on tracheal epi-

thelial barrier function, L284 role in proline transport across renal brush-border membrane, F155

role in pulmonary vascular bed pressor responses, L532

role in strain-induced fetal lung cell increase, L729

role in type I collagen effect on signal transduction in osteoblasts, and cell-matrix interactions, C1090

and serotonin dual effects on Ca<sup>2+</sup> channels in aortic smooth muscle cells, H544

upregulation by adenosine receptor, subtype involved, H271

PKG-Iα

upregulation of  $Ca^{2+}$ -dependent  $K^+$  channels in tracheal smooth muscle, L1057

Protein phosphatases

PP1, relation to dopamine and Na<sup>+</sup>-K<sup>+</sup>-ATPase in proximal tubule, F279

PP2A, and modulation of neuronal delayed rectifier K<sup>+</sup> current by angiotensin II type 2 receptor fragment, C278

Protein phosphorylation

and impaired umbilical artery vasorelaxation, H202

Protein tyrosine kinases

and genistein effects on Ca<sup>2+</sup> mobilization in carotid media, C1425 inhibition, effects on CFTR, C886 role in calcium entry into colonic epithelial cells, C154

role in interferon-γ-induced MHC class II gene expression, C127

role in microvascular effects of plateletactivating factor, H399

Protein tyrosine phosphatases

and calcium entry into colonic epithelial cells, C154

role in insulin resistance of streptozotocin-induced diabetes, E932

transmembrane type, expression along rat nephron segments, F1102

Proteins

in body compartments, relation to capillary hydraulic conductivity and volume status in frogs, seasonal variations, R468

capillary permeability to, effects of atrial natriuretic peptide on, H1139

cationic, role in histone-induced epithelial damage, C1114

cerebral, synthesis rates and recycling of leucine, age-related changes, R549

degradation, amino acid and ammonia metabolism in canine gastrocnemius, R759

degradation, in chronic renal failure, insulin-mediated changes and effects of acidosis, E121

in diet

dopaminergic renal excretory responses, aging effects on, F613 effects on renal function and renal microcirculatory effects of angiotensin II F302

restriction during pregnancy, effects on insulin actions, E722

role in obesity, vs. dietary fat level or genetics, R658

dietary deficiency, effects on hepatic amino acid transport in suckling rats, E368

galactosylated, recognition by liver, G849

of membranes, problems with cell surface biotinylation protocol, F285 metabolism

in cytokine- and endotoxin-treated rats, effects of interleukin-1 receptor antagonist, E255

effects of exercise and dietary protein intake in elderly, E1143

in fetus, cortisol effects on, E1114 in muscle, proteolytic effects of local epinephrine infusion, E55

insulin-like growth factors and IGF binding proteins, persistent posttraumatic changes, R970 produitone effects in Duckenne and

prednisone effects in Duchenne and Becker muscular dystrophy, E67 in renal failure, long-term adaptation

to very low protein diet, E668 in skeletal muscle, amino acid kinetics in, E75

in plasma

extravasation, from thromboxane  $A_2$  receptor activation, R366

restoration after hemorrhage, role of intestinal food and water, R715

in serum, use as biomarkers of normal aging and age-related pathologies, synthesis

exercise-induced, effects of added growth hormone in older men, E268 glucocorticoid-induced decrease, glutamine effects on, E730

in heart muscle, heat-shock protein-70 effects on peptide initiation during head-down tilt, C1375

in muscle and liver, effects of age, nutritional state, and exercise, E328 myofibrillar, reduction in elderly, effects of resistance training on, E422

rates and cellular content, in electrically stimulated contracted cardiomyocytes, H2495

role in recovery of microvascular endothelium-dependent dilation after injury, H512

sepsis-induced peptide-chain inhibition, amrinone effects on, E491

in skeletal muscle, HSP 70 effects on polypeptide elongation during skeletal muscle atrophy, C1369

in vivo rate measurement, flooding method with minimal precursor pool activity assumptions, E735

whole body, measurement via <sup>13</sup>CO<sub>2</sub> vs. plasma precursor techniques, E174

synthesis and breakdown, aging effects on, E1083

synthesis, blockade, cytoresistance from in proximal tubule cells, F1154

tissue content, relation to metabolic rate in mouse, rat, rabbit, sheep, and cattle liver and kidney, R641

turnover

cortisol effects on, E501 exercise-induced acceleration, E514 in skeletal muscle, response to mechanical stimuli, E288

Proteinuria

apolipoprotein AI catabolism sites and rate in nephrotic rat, F532

in early anti-glomerular basement membrane nepritis, as predictor of outcome, F258

Proteolysis

in malignant mesothelioma cells, role of urokinase receptor, L972

in muscle, chloroquine effects on, E820 role in glycodeoxycholate-induced hepatocyte apoptosis, G613

**Proton extrusion** 

role in gastric mucosal oxyntic cell pH<sub>i</sub>, G496

**Proton transport** 

inward, via sodium-potassium pump, C590

osmotically activated, in smooth-muscle vs. Chinese hamster ovary cells, C147

in proximal tubule pH<sub>i</sub> regulation, effects of luminal and basolateral CO<sub>2</sub>/HCO<sub>3</sub>, F179, F193

Proton-ATPase

role in hepatic lysosomal uptake and transport of organic cations, G480

Proton-potassium ATPase, see Hydrogen-potassium ATPase

Protooncogenes

see also Genes, immediate early

c-fos, gene expression, and angiotensin II induction of  $\alpha_1$ -adrenergic receptors in aortic cells, H1006

c-fos, meal-induced expression, gastrointestinal cues stimulating, R223 c-fos, pancreatic expression, effects of

veratridine or serotonin, G339 c-myb, role in  $[Ca^{2+}]_i$  control at cell cycle  $G_1/S$  interface, C856

c-myc, and low-density lipoprotein receptor gene induction by isoform-specific platelet-derived growth factor, C1033

early response in liver regeneration, role of salivary glands, G872

early-growth-related, after unilateral vs. subtotal nephrectomy, F793

and effects of lipoxygenase inhibitors on platelet-derived growth factor-induced mitogenesis, C604

Protoporphyrin

excretion, facilitation by bile acids, G754

Psychometric analysis

achievement in anatomy and physiology course

and Gregorc learning style indicator results, S56 and Myers-Briggs psychological type

indicator results, S61
Published papers

in basic medical sciences, student checklist for critical analysis, S21

Pulmonary arteries

see also Muscle, smooth, vascular effects of inhaled NO during hypoxic and U-46619-induced vasoconstriction, H1422

endothelial cells

barrier function, mechanisms of disruption by pertussis toxin, L926 cultured human, effects of endotoxin on, L239

neutrophil adherence, nucleotidestimulated, role of ATP-binding proteins, L666

endothelial cells vs. endocardial cells: morphology, growth, PG release, H250

endothelin receptor subtypes present in newborn piglets, L607 fast transient outward current in human smooth muscle cells, H2358

man smooth muscle cells, H2358 in fetus, vs. pulmonary veins, effects of endothelium-derived NO, H1586

pressure-flow relations, in embolic hypertension, Starling resistor vs. distensible vessel models, H817

static wall tension and vascular cell proliferation in pulmonary hypertension, H1133

vasoconstriction

from endothelin-1, after endotoxin, modulation by endothelium, H2260 hypoxic, changes in [Ca<sup>2+</sup>]; and tension, and role of PKC, H301

voltage-gated K<sup>+</sup> channels in myocytes, regulation by cytochrome P-450, C259

**Pulmonary circulation** 

baroreflex effects on pulmonary vs. renal sympathetic nerve activity, R1078

**Pulmonary fibrosis** 

hyperoxic, 85%  $O_2$  effects on type I collagen, transforming growth factor- $\beta_1$ , and related genes, L78

Pulmonary hypertension, see Hypertension, pulmonary

Pulmonary microvasculature

neutrophil-mediated injury, pentoxifylline protection mechanisms, L27

Pulmonary stenosis

effect on right ventricular infarct size, H1781

Pulmonary surfactant, see Surfactant Pulmonary vascular bed

angiotensin peptide IV effects, vs. other vasoactive peptides, L302

dual effects of histamine on tone and role of prostanoids, H653

Pulmonary vascular resistance, see Vascular resistance, pulmonary

Pulmonary vasculature

blockage site in NO vasodilation pathway in fetal pulmonary hypertension, H1483

**Pulmonary vasorelaxation** 

guanosine 3',5'-cyclic monophosphatemediated, dysfunction in endotorininduced injury, L1029

Pulmonary veins

effects of inhaled NO during hypoxic and U-46619-induced vasoconstriction, H1422

endothelin receptor subtypes present in newborn piglets, L607

in fetus, vs. pulmonary arteries, effects of endothelium-derived NO, H1586 flow velocity patterns, mathematical model, H476

Pulse pressure

effects on acetylcholine-induced vascular relaxation, H359

Purine nucleotide cycle

relation to ammonia and amino acid metabolism in canine gastrocnemius, R759

Purinergic receptors

see also Nucleotide receptors P<sub>2</sub>, role in Cl<sup>-</sup> secretion in T84 epithelial cells, C425

Purinoceptors

and nucleotide-stimulated leukocyte adherence to pulmonary artery endothelial cells, L666

Pylorus

motor activity, relation to surface electrogastrography, G424

Pyrimidine nucleotide receptors role in nucleotide-stimulated leukocyte adherence to pulmonary artery en-

adherence to pulmonary artery endothelial cells, L666

Pyruvate

ryruvate

as H<sub>2</sub>O<sub>2</sub> scavenger, C227

and lactate, plasma and tissue isotopic enrichment values, problems with use, E880

metabolism in vascular smooth muscle, vs. glucose, and energetics compartmentation, C628

oxidation, in ischemic heart, effects of dichloroacetate, H879

as substrate, in myocardial ischemia, role in reducing injury, H935

Pyruvate dehydrogenase

activity in muscle, effects of acetate infusion and exercise, E1007

and carbohydrate metabolism and systolic function in ischemic heart, H879 Pyruvate dehydrogenase complex

response to changes in plasma glucose and insulin, effects of high-fat diet, E752

#### Q

Quadriplegics

 $\begin{array}{c} he modynamic\ responses\ to\ vasopressin\\ during\ V_1\ receptor\ blockade,\ R156 \end{array}$ 

Quinacrine

effects on neutrophil priming and lung injury after intestinal ischemia-reperfusion, G397

Quinones

redox-cycling, H<sub>2</sub>O<sub>2</sub> production from, scavenging by α-ketoacids, C227

#### R

Raf

and lipoxygenase inhibitor effects on platelet-derived growth factor-induced mitogenesis, C604

Ramiprilat

effects on skeletal muscle arteriolar tone and dilation to bradykinin, H1628

Ras

activation by pancreatic acinar cholecystokinin, G1060

Rat obesity fatty (fa) gene

codominant effects in fatty rat litters, E15

Reactive oxygen species

see also Oxidant stress; Oxidative stress; Oxygen radicals; Peroxides; Superoxide anion

and effects of hepatic hypoxia on  $E.\ coli-$  induced TNF- $\alpha$  expression, G311 and effects of hepatic ischemia-reperfu-

sion on pulmonary permeability, G988

effects on hepatic microcirculatory status and transport function, G47 effects on surfactant biosynthetic en-

effects on surfactant biosynthetic enzymes in type II cells, L129 effects on transepithelial ion transport

effects on transepithelial ion transport in middle ear SV40-transformed cell line, L390

and endothelial cell xanthine dehydrogenase/xanthine oxidase activity, L809

iron-derived, lung endothelial heme as source, L321

 $\alpha$ -ketoacids as  $H_2O_2$  scavengers, C227 lung injury from, pH-sensitive liposomes for antioxidant delivery to type II cells, L374

plasma potassium effects on, relation to potassium's cardiovascular protective role, R825

proximal tubular epithelial cell injury from  $H_2O_2$ , role of lipid peroxidation, F30

role in asbestos-induced lung injury, relation to DNA strand breaks, L471 role in PMN-mediated GI mucosal in-

role in PMN-mediated GI mucosal injury, G843

role in reflex cardiovascular responses to myocardial ischemia-reperfusion, H2114

role in tissue damage from chronic hypertension, H1418

Receptor-operated channels

for cations, in smooth muscle, role of H<sup>+</sup>, C162 Receptors

see also specific substances in airway smooth muscle cells (review), L1

Rectal gland

of dogfish, cAMP-activated chloride channels, C70

Rectifiers, see under Potassium currents; Chloride channels, cur-

Rectin

possible identity to scyliorhinin II, R1359

Rectum

distension-induced Cl<sup>-</sup> secretion, vasoactive intestinal peptide as neurotransmitter, G725

Red blood cells, see Erythrocytes

Redox states, myocardial effect of substrates on, H82

role in inhomogeneous perfusion pattern in ischemia, H2183

Redox status

effects on endothelial cell xanthine dehydrogenase/xanthine oxidase, L809

Refeeding

after fasting, effects on insulin-like growth factor system in small bowel, G631

Reflection coefficient

and osmotic flow and pressure, student laboratory, S10

Reflex pressor response, see Exercise pressor reflex

Regulatory volume decrease

mechanisms in nonpigmented ciliary epithelial cells, C721

in mouse erythrocytes, role of K<sup>+</sup>-Cl<sup>-</sup> cotransport, C894

in retinal pigment epithelial cells, C89 swelling-activated  $K^+$  and  $Cl^-$  transport in lamprey erythrocytes, R590

and taurine permeability of proximal tubule basolateral membrane, F595

Regulatory volume increase

osmolality-stimulated atrial natriuretic peptide secretion, role of calcium and sodium ions, E476

Renal failure, see Kidney failure Renal nerves

afferent activity, effects of essential fatty acid deficiency, R164

interaction with prostaglandins in phosphaturic response to parathyroid hormone in phosphate-deprived rat, R731

role in nitric oxide influence in glomerular microcirculation and proximal tubule, F1004

Renal nerves, sympathetic

in cardiac failure: arterial vs. cardiac baroreflex defects, R112

and cardiopulmonary baroreflex age-related changes, H1343 effect of dietary sodium, H61

in cirrhosis, arterial and cardiopulmonary baroreflex control, R117

effects of area postrema stimulation and changes with anesthesia, H1086

and gestational effects on volume-sensitive cardiopulmonary receptors, R736

vs. pulmonary sympathetic, baroreflex effects on, R1078

role in renin response to exercise, E636

in Wistar and spontaneously hypertensive rats, insular cortex-mediated responses, R214

Renin

effects of loading and unloading right heart baroreceptors on secretion, R1069

juxtaglomerular secretion endothelin effects on, F39

NO effects on isolated granular cells, F948

NO effects on perfused juxtaglomerular apparatus, F953

ontogeny in juxtaglomerular apparatus, comparison with NO synthase, F1164

plasma activity

effects of head-out immersion in water, R583

effects of vertebral artery-infused angiotensin II, F296

time- and dose-related effects of indomethacin or meclofenamate, F468

plasma levels after chronic NO synthase inhibition,

effects of long-term endothelin infusions, R375

effects of peptide YY on, F754

in fetus, after carotid occlusion, and immaturity of vagal afferent buffering systems, R343

release, regulation by atrial natriuretic peptide during severe heart failure, H2281

response to exercise, role of renal nerves and effects of kidney transplant, E636

response to hemorrhage, role of brain angiotensin II, R1500

Renin-angiotensin system

activation during severe heart failure, relation to ANP effects on renin release, H2281

antinatriuretic and volume-expanding actions, F296

in AT-1 transgenic cardiomyocytes, H1471

and effects of L-arginine analogues on aldosterone secretion, R1137 role in angiotensin II generation in iso-

lated glomerulus, F266 role in hypertension from chronic NO synthase inhibition, H2267

role in reduced pressure diuresis and natriuresis response in hyperthyroidism, E897

in temperature-sensitive SV40-immortalized proximal tubule cell line, F435

Reperfusion, see Ischemia-reperfusion; Oxygenation, posthypoxic Reproductive cycles

use of melatonin for controlling, pharmacokinetics of exogenous doses in pony mares, R1236

Reptiles

hypercapnia effects on pH<sub>i</sub> in brain and skeletal muscle of two lizard species, R889 Resistance arteries

cAMP-induced contraction, role of cGMP, H1223

femoral, effects of aging on, in beagle, H92

renal, L-type calcium channels at bifurcations, hemodynamic role, F251

Resistance training, see Exercise Resistance vessels

coronary, diameter regulation, role of myogenic mechanisms, H788

of forearm, in cirrhotics, response to methacholine, nitroprusside, and phenylephrine, G459

gap junctional connexin proteins in arteriolar smooth muscle and endothelium, H729

Respiration

brain stem nuclei controlling connections with sleep-causing pontine reticular regions, L251 muscarinic receptor subtypes in, L941 cellular, and hypoxic inhibition of cytochrome-c oxidase, L918

cellular and mitochondrial, in postischemic intestinal enterocytes, G116 vestibular input, required brain stem projections, R1381

Respiratory diseases, see Allergy; Asthma

Respiratory distress syndrome see also Adult respiratory distress syndrome

in prematures, pH-sensitive liposomes for antioxidant delivery to type II cells, L374

Respiratory drive

central, effects on barosensitivity of rostral ventrolateral medulla, R909

Respiratory failure

neonatal, from hereditary surfactant protein B deficiency, aberrant SP-C peptide, L647

Respiratory gases

and airway smooth muscle relaxation, role of pH<sub>i</sub>, L207

Respiratory sinus arrhythmia

time domain characterization using autoregressive moving average analysis, H2232

Respiratory syncytial virus

effects on airway nonadrenergic noncholinergic inhibitory system, L1006 Respiratory tract, see Airway

Restenosis after angioplasty

thrombin-induced migration of vascular smooth muscle cells, C1195 thrombin-induced mitogenesis in aortic smooth muscle cells, C1141

Reticuloendothelial system

uptake of oxidatively modified chylomicrons, G709

Retina, see Eye, retina Retinal artery

peroxide-induced vasoconstriction and role of thromboxane, H628

Retinal vein

peroxide-induced vasoconstriction and role of thromboxane, H628

Retinoic acid

effects on glucocorticoid stimulation of fatty-acid synthase gene transcription in fetal lung, L683 Retinol binding proteins, cytoplasmic

CRBP and CRBP II, roles in intestinal vitamin A trafficking, G224

Retinyl esters

synthesis and secretion in Caco-2 cells, and cytoplasmic retinol binding proteins, G224

Retrograde cardioplegia

total microvascular flow, nutritive flow, and myocardial cooling during, H1555

Ribosomes

membrane-bound, use in quantitating rough endoplasmic reticulum, C308

ickets

hypophosphatemic vitamin D-resistant, and adaptation of renal Na\*-P<sub>i</sub> transporter to phosphate deficiency, G917

X-linked hypophosphatemic, murine *Hyp* homologue, osteoblast phenotype abnormalities (review), F357

Rotenone

hepatocyte death from, role of Ca<sup>2+</sup> and mitochondrial permeability transition, C676

Rough endoplasmic reticulum biochemical quantitation, C308

RU-486

effects on parametrial arterial flow velocity in pregnancy, R614

Rubidium

tissue uptake rate, and sodium pump energetics in mouse, rat, rabbit, sheep, and cattle liver and kidney, R641

Ryanodine

effects on calcium release from hepatic microsomes and permeabilized hepatocytes, G1017

and isoproterenol effects on peripheral vs. inner [Ca<sup>2+</sup>], levels in airway smooth muscle cells, C771

Ryanodine receptors

and caffeine effects on calcium receptors and [Ca<sup>2+</sup>]<sub>i</sub> in osteoclasts, F447 gene expression in pressure-overload

cardiac hypertrophy, C252 skeletal isoform, and cyclic ADP-riboseinduced Ca<sup>2+</sup> release in skeletal sarcoplasmic reticulum, C1235

8

Saccharin

conditioned taste aversion to, effects of serotonin<sub>3</sub> receptor antagonists, R1203

Saline

effects on proximal colonic tone, G95

Salivary ducts

intralobular, amiloride-sensitive Na<sup>+</sup> channels in, C350

mandibular, forskolin- and norepinephrine-activated chloride currents, in mouse, G806

Salivary glands

muscarinic receptors, kinetic analysis, R1491

role in liver regeneration, G872 submandibular, gene transfer via adenovirus and plasmids, G1074

Salivary secretion

interaction of sympathetic and reflex parasympathetic effects, R1188 reflex, in submandibular gland, role of chorda tympani afferents, R438

sympathetic and parasympathetic, effects of clonidine and yohimbine, R1196

Salt and water balance

see also Sodium homeostasis

regulation in fowl, colonic motility and urine reflux, R690

Saphenous nerve

afferent, nociceptive C-fibers, sensitization in zinc deficiency, R1423

Saphenous vein

inducible L-arginine/nitric oxide pathway, H1122

Sarcolemma

see also Sarcoplasmic reticulum ischemia-induced damage, role of phospholipid physicochemical properties, H773

Na<sup>+</sup>/Ca<sup>2+</sup> exchange, role in cardiomyocyte contraction, in newborn vs. adult rabbits, H1723

vesicles, in heart, glutamate transport in, H194

Sarcomeres

length, and microvascular geometric responses to muscle length changes, H336

of myocytes, reversibility of series added during volume overload hypertrophy, H2345

Sarcoplasmic reticulum

calcium ATPase, role in cyclic nucleotide-induced airway smooth muscle relaxation, L407

calcium current-gated Ca<sup>2+</sup> release in cardiomyocyte contraction, effects of age on, H1195

calcium handling during cardiac postischemic reperfusion, H100

calcium load, in cardiomyocytes, effects on gain index of Ca<sup>2+</sup> release, H916 calcium pump in, in cardiomyopathic

hamster, effects of perindopril, H1947

calcium stores, role in acetylcholine potentiation of acetylcholine-induced K<sup>+</sup> currents in atrial myocytes, H1322

calcium uptake, and calcium/calmodulin-dependent protein kinase role in ventricular myocyte relaxation, H703

in cardiac papillary muscle, calcium ion regulation in cardiomyopathy, H1875

of cardiomyocytes

effects of calcium load on fractional calcium release, C1313

localization of Na<sup>+</sup>/Ca<sup>2+</sup> exchanger in immature and adult rabbits, C1126 protein levels in cardiac hypertrophy,

role in dysfunction, C252 and E-C coupling changes in malignant hyperthermia-susceptible muscle, C122

and effects of anoxia, reoxygenation, hypoxia, and metabolic inhibition on [Ca<sup>2+</sup>]<sub>i</sub>, H1045

maturity, and ontogeny of cardiomyocyte Na<sup>+</sup>/Ca<sup>2+</sup> exchange in rabbits and guinea pigs, H1714

ryanodine-inhibited, and left ventricular load-dependent relaxation, H17 Sarcoplasmic reticulum (continued)

and site of intracellular Na/Ca exchange-dependent Ca compartment, C119

of skeletal muscle, calcium release channels in, activation by cyclic ADPribose and related agents, C1235

#### Satietin

effects on blood profile and metabolic balance, R1

#### Satiety

see also Food intake

cholecystokinin effects on vagal gastric mechanoreceptors, G355

cholecystokinin vs. amino acid effects on intake of highly nutritive diet vs. sucrose, R520

Scatter factor, see Hepatocyte growth factor/scatter factor

Scavenger receptors

in caveolae-mediated vesicular transport, inhibition by N-ethylmaleimide, H48

Scavengers

and peroxynitrite chemistry, L699

Sciatic nerve

resection-induced neuroma, calcitonin gene-related peptide accumulation and activity, H584

Scyliorhinin II

possible identity to rectin, R1359

Seasonal cycles

seasonal changes in sex hormone-binding globulin and thyroxine plasma levels in male little brown bats, R1303

seasonal variations in capillary hydraulic conductivity and volume status in frogs. R468

Secretagogues

calcium ion-dependent, need for cAMP in eliciting parietal cell aminopyrine accurulation, G82

effects of supramaximal doses on pancreatic acinar cell cytoskeleton, G328

serum prolactin and growth hormone changes from, effects of cold exposure on, E758

Secreted protein, acidic and rich in cysteine

cytokine-binding proteins in lung (review), L869

Secretin

effects on gastric motility, role of vagal afferent pathway, G1012 effects on pancreatic goblet cell degranu-

lation, G24

Secretogranin II release from adenohyophysial gonadotrope cells, E145

Secretory leukocyte protease inhibi-

in airway epithelial cells, corticosteroid effects on, L601

Selectins

E-selectin, and cytokine-induced neutrophil chemoattractant effects in lung inflammation, L245

E-selectin, tumor necrosis factor-αinduced production in splanchnic artery occlusion shock, H1412

P-selectin, role in oxidized chylomicroninduced leukocyte-endothelial cell adhesion, H2175 Selenium

dietary deficiency, and sulfation metabolism of thyroid hormones, E572

Semen

toxicity to colon epithelium, role of histones, C1114

Senescence, see Aging Sensory integration

role of amygdala, R666 role of parabrachial nucleus, R707

Sensory nerves

C fiber, neuropeptides from, effects on airway epithelial cells, L957

Sensory stimuli

amygdalar responses to, R666

Sepsis

see also Shock, septic

endotoxin-induced vascular hyporeactivity, role of nitric oxide, G177

glucagon role in sepsis-induced increased hepatic gluconeogenesis, E92

gram-negative, hepatic TNF- $\alpha$  expression from, effects of hypoxia-reoxygenation, G311

hepatic dysfunction in, role of nitric oxide biosynthesis, G183

metabolic effects during fed state and role of interleukin-1, E255

muscle wasting from inhibition of peptide-chain initiation, amrinone effects on, E491

SERCA2a (cardiac/slow-twitch muscle Ca<sup>2+</sup>-ATPase)

gene expression in pressure-overload cardiac hypertrophy, C252

Serine protease

translocation to nucleus, role in bile acid-induced hepatocyte apoptosis, G613

Serine-threonine kinases

and lipoxygenase inhibitor effects on platelet-derived growth factor-induced mitogenesis, C604

Serotonergic neurons

enteropancreatic, role in pancreatic exocrine secretion, G339

Serotonin

activation of phospholipase D in mesangial cells, F997

blood flow control in fish gill filaments, sites of vasoconstriction, R1224 and circadian rhythmicity control,

changes with aging, R293 dual effects on L-type Ca<sup>2+</sup> currents in aortic smooth muscle cells, H544

effects on lower esophageal sphincter, receptor subtypes involved, G1004

effects on neurons of vagal dorsal motor nucleus, alone and with thyrotropin-releasing hormone, G292

effects on oxygen, lactate, and glycerol metabolism in marsupial skeletal muscle, R1217

hypothalamic, effects of depletion on streptozotocin-induced diabetes, E839

lumph node relaxation from, H2246 presynaptic inhibition of nerve-mediated pancreatic amylase secretion, G339

and protein-induced dopaminergic renal excretory responses, aging effects on, F613

role in fish gill branchial vasculature response to hypoxia, R771 Serotonin receptors

5-HT<sub>1A</sub>, agonist 8-hydroxy-2-(di-n-propylamino)tetralin, phase resetting in hamsters, effects of aging on, R293

5-HT<sub>1A</sub>, in dorsal horn, effects on exercise pressor reflex and substance P, H1577

5-HT<sub>2A</sub>, identification in glomerular mesangial cells, F122

5-HT<sub>3</sub>, role in conditioned taste aversion to amino acid-imbalanced diet in rat. R1203

5-HT<sub>3</sub>, role in serotonin effects on lower esophageal sphincter, G1004

novel 5-HT<sub>1</sub>-like receptor mediating cAMP synthesis in porcine pial vein, H1383

pancreatic, 5-HT<sub>1P</sub>, role in inhibition of pancreatic amylase secretion, G339 subtypes 1A, 1B, 2A/2C, 3: roles in food

intake and metabolic rate, R14
Sevoflurane

effects on tracheal smooth muscle voltage-activated Ca<sup>2+</sup> channels, L187

Sex hormone-binding globulin and thyroxine, seasonal plasma level changes in male little brown bats.

R1303 Sex hormones

effects on parametrial arterial flow velocity in pregnancy, R614

female

see also Estrogen; Progesterone effects on gastric emptying and gastrointestinal transit. G:71

effects on liver mitchondria: role in acute fatty liver of pregnancy, G107 testosterone, effects on gastric emptying and gastrointestinal transit, G171

Sexual dimorphism, see Gender differences

Shaker potassium channels

molecular determinants of ion conduction and inactivation (review), C535

Shear force

role in neutrophil-endothelial interactions in coronary microvessels, H490

Shear stress

at luminal surface of flow-aligned and nonaligned endothelial cell monolayers, subcellular analysis, H1765

blood velocity profiles and effective viscosity in low-shear tube flow, H25 effects on hydraulic conductivity of en-

dothelial cells, H535 and endothelium-derived relaxing factor role in norepinephrine-induced

coronary vasodilation, H1973 Shivering threshold

during fever from poly I:C and effects of square-wave total body cooling, R1266

Shock

see also Heat stress

endotoxic, effects of antioxidant U-74006F on hemodynamics and oxygen extraction, H1847

from splanchnic artery occlusion, tumor necrosis factor-α and E-selectin production, H1412

hemorrhagic, adenosine 5'-triphosphatemagnesium chloride use after, effects on endothelial cell function, H1390

hemorrhagic, β-adrenergic receptor downregulation, G749

septic

see also Sepsis

hemodynamic effects of fluids and catecholamines, H692

pulmonary artery vasoconstriction from endothelin-1 after endotoxin, modulation by endothelium, H2260 septic, endotoxin-induced

cardiac contractile dysfunction, nonroles of NO and cardiac energy metabolism, H2460

Escherichia coli endotoxin effects on aortic release of EDRF and NO, H955

hemodynamic changes, effects of nitric oxide synthase inhibitors, H2017

hemodynamic effects on portal venous and hepatic arterial vascular beds, H1106

N<sup>ω</sup>-monomethyl-L-arginine hemodynamic effects in *Escherichia coli* endotoxemia, H1634

# Short-circuit current

see also Ion transport

colonic, dimaprit-evoked increases, role of VIP-ergic and cholinergic neurons, G465

jejunal, in CF vs. normal mice, G505 SH-PTP2/syp, see Protein tyrosine

phosphatases Sickle cells

abnormal rheology, roles of hemoglobin polymerization and membrane defects, H2003

Signal transduction and 5-lipoxygenase kinetics during postischemic reoxygenation in brain,

H1249 adenosine receptor subtype involved in PKC regulation, H271

cardiac β-adrenergic, portal vein stenosis effects on, G410

Ca<sup>2+</sup>, modulation by glutathione peroxidase reductant substrate, H278

in G protein-coupled regulation of Ca<sub>i</sub> and Na/H exchanger NHE-1, C101

and lipoxygenase inhibitor effects on platelet-derived growth factor-induced mitogenesis, C604

in osteoblasts, and cell-matrix interactions, role of type I collagen, C1090 and pathways mediating smooth muscle

relaxation, C171 phospholipase C pathway, role in epidermal growth factor inhibition of Na-P<sub>i</sub> cotransport, F309

and phosphorylation of delayed rectifier K\* current in in vascular smooth muscle, H926

protein ZO-1 tyrosine phosphorylation during glomerular tight junction formation, F514

role in shear stress effects on endothlial hydraulic conductivity, H535

in tumor necrosis factor-α-induced regulation of transepithelial resistance, F315

rolo

in interferon-γ-induced MHC class II gene expression, C127 intracellular, role of NO, cAMP, and cGMP in β-adrenoceptor-induced pial vasodilation in newborn, H1071

nuclear, and lipoxygenase inhibitor effects on platelet-derived growth factor-induced mitogenesis, C604

transmembrane, α<sub>1</sub>-adrenergic-stimulated NaCl(K) cotransport in normal and cystic fibrosis airway epithelial cells, L414

Signaling mechanisms

neural signaling of gastric water absorption, R236

in proximal tubule CO<sub>2</sub>/HCO<sub>3</sub> induced pH; changes, F193

Signaling pathways

intracellular, in regulation of pancreatic goblet cell degranulation, G24 in strain-induced fetal lung cell increase,

Simian virus 40

SV40-immortalized proximal tubular cells, renin-angiotensin components in, F435

Sinoaortic denervation

determining baroreflex sensitivity from blood pressure and heart rate by statistical dependence, R382

and dietary sodium effect on cardiopulmonary baroreflex control of renal sympathetics, H61

effects on baroreflex responses to volume expansion in newborn, H1343

Skeletal muscle

in partitioning of glucose effectiveness and insulin sensitivity, E410

Skin

role in apolipoprotein AI catabolism, in nephrotic rat, F532

Skin fibroblasts

hormone-induced cAMP production, bile acid effects on, G908

Skin temperature

effect on capillary pressure physiology in healthy adult volunteers, H147

Sleep

brain temperature during, effects of elevated ambient temperature, R1365 circadian reentrainment, effects of periodic bright light and social cues, R528

dehydroepiandrosterone effects on in humans, E107

deprivation, effects on noradrenergic activity and tyrosine hydroxylase, R1456

effects of endotoxin on, R1310

effects on systemic and uteroplacental hemodynamics in pregnancy, H1734

respiratory depression during, and pontine reticular region connections with brain stem respiratory nuclei, L251

Sleep apnea

blood pressure and heart rate oscillations, role of carotid body chemoreflex. H2145

Small cell lung cancer cell lines as model for studying atrial natriuretic peptide secretion, H1869

Smoking, see Cigarette smoke Social schedule

and reentrainment of human circadian rhythms, R528 Sodium channels

in cortical collecting duct, feedback regulation and response to cAMP, F480 and endothelin-3-induced vasopressin

secretion, E467

epithelial, in leech dorsal skin, regulation and bioelectric properties, R605

of human epithelial cells: β- and γ-subunits, cloning, chromosomal location, and characterization, C1157

in inner medullary collecting duct cell line mIMCD-K2, F347

L-type, presence in alveolar type II cells, C1148

in salivary intralobular ducts, C350 stretch-activated, in renal epithelial cells, C1450

Sodium chleride

convective uphill renal transport mathematical model, effect of vasa recta flow, F698

mathematical model, F680, F693 depletion, effects on angiotensin II production in isolated glomerulus,

effects on phosphatidylcholine catabolism in renal cells, C402

transport, in proximal convoluted tubule, chloride/base exchange in superficial vs. juxtamedullary nephrons. F847

Sodium chloride (potassium) cotransport

α-adrenergic-stimulated, in airway epithelial cells, role of PKC, L414

Sodium currents

inward, in ventricular myocytes, effects of intra- and extracellular acidosis, H1749

in ventricular myocytes, changes during culture, C993

voltage-dependent, in human pulmonary artery smooth muscle, H2358

Sodium homeostasis

see also Salt and water balance

effects of long-term  $N^G$ -nitro-L-arginine methyl ester infusion, R317

natriuretic response to hypertonic and isotonic saline, role of oxytocin, R634

role of endogenous central opioids and effects of dietary sodium restriction, R723

Sodium ion

see also Hyponatremia

cotransport with glucose, in cystic fibrosis jejunum, G505

dietary

effect on cardiopulmonary baroreflex control of renal sympathetic nerves, H61

effects on endogenous lithium clearance, F718

effects on protein-induced dopaminergic renal excretory responses, aging effects on, F613

dietary deficiency, adrenal glomerulosa cell growth responses to angiotensin II, E135

dietary restriction, effects on endogenous central opioid role in sodium and water balance, R723

effects on cellular P<sub>i</sub> and ATP levels in renal tubular cells, F375

#### Sodium ion (continued)

pressure response, decrease in hyperthyroidism, role of renin-angiotensin system, E897

pressure response, and salt-induced hypertension in Dahl rat, role of NO. H2375

relation to uric acid excretion in humans, E1

extracellular, role in pH<sub>i</sub> control, C580 influx, role in stretch-induced ventricular arrhythmias, H1803

intracellular

relation to [Ca2+]; and cell morphology during cardiomyocyte metabolic inhibition, H1239

and role of thrombin receptor activation in arrhythmias during myocardial ischemia, H1740

in ventricular myocytes, ACE inhibitor effects on, C366

in ventricular myocytes, palmitoylcarnitine effects on, H2405

plasma levels

effects of head-out immersion in water, R583

role in water intake and hypothalamoneurohypophysial activity in rat,

and potassium ion, effects on contractility, implications for fatigue, C1528 renal/urinary excretion

see also Natriuresis

atrial natriuretic peptide effects on, changes in pregnancy, F416

effects of vertebral artery-infused angiotensin II, F296

roles of endothelin receptor subtypes, F455

role in acetylcholine potentiation of acetylcholine-induced K+ currents in atrial myocytes, H1322

role in osmolality-stimulated atrial natriuretic peptide secretion, E476

transepithelial transport in middle ear SV40-transformed cell line, oxidantinduced changes, L390

transport, electrogenic, in inner medullary collecting duct cell line mIMCD-K2, F347

transport in cortical collecting duct effects of basolateral metabolic acidosis, F490

effects of luminal prostaglandin E2,

transport, in distal colon, time course of disruption and recovery during colitis. G622

transport in distal convoluted tubule, entry mechanisms, F89

transport in renal epithelial cells, relation to GTP hydrolysis and aldosterone effects on, C557

urinary excretion, effects of vasopressin V<sub>1</sub> receptor stimulation, R796

vasopressin effects on conductance in luminal and basolateral cortical collecting duct, F20

Sodium nitroprusside, see Nitroprusside; see also Vasodilators

#### Sodium overload

from ischemia-reperfusion, beneficial effects of reduced reflow rate, H2384

Sodium phosphate 4 mRNA

inhibition by epidermal growth factor in opossum kidney epithelial cells,

Sodium pump

see also Sodium-potassium-ATPase sarcolemmal, role in protection of reoxygenated cardiomyocytes from hyper-

contracture, H1531 Sodium receptors

in cerebrospinal fluid, role in water intake and hypothalamoneurohypophysial activity in rat, R651

Sodium transport

active, differentiation in larval bullfrog skin, hormonal inducers, C218

Sodium-ascorbate cotransport role in osteoblastic ascorbate uptake,

Sodium-bicarbonate cotransporter in kidney, role of G proteins in regula-tion, F461

Sodium/calcium exchange

in cardiomyocytes

ontogeny in rabbits and guinea pigs, relation to sarcoplasmic reticulum maturity, H1714

role in contraction, in newborn vs. adult rabbits, H1723

and effects of anoxia, reoxygenation, hypoxia, and metabolic inhibition on [Ca2+], H1045

effects on Ca2+-activated Cl- current in portal vein smooth muscle cells. H1906

role in [Na+]; and [Ca2+]; regulation during cardiomyocyte metabolic inhibition, H1239

role in osmolality-stimulated atrial natriuretic peptide secretion, E476

Sodium/calcium exchanger

cardiomyocyte localization in immature and adult rabbits, C1126 and site of intracellular Ca compart-

ment, C119 Sodium-chloride cotransport

and sodium entry into distal convoluted tubule cells, F89

Sodium-chloride-potassium cotransport in macula densa, and effects of barium

ions on tubuloglomerular feedback,

role in electrogenic chloride secretion in inner medullary collecting duct cell line mIMCD-K2, F854

Sodium/hydrogen antiport in renal mitochondria, C1227

Sodium/hydrogen exchange amiloride-sensitive, in thin ascending limb of Henle's loop, F410

hypertonic activation, and anion exchanger AE2 activation in Xenopus oocytes, C201

inhibition, role in protection of reoxygenated cardiomyocytes from hypercontracture, H1531

and mechanism of osmolality-stimulated atrial natriuretic peptide secretion,

and oxyntic cell pHi, role of interstitial buffering, G496

regulation by Na+/H+ exchanger recruitment, C434

role in [Na+], and [Ca2+], regulation during cardiomyocyte metabolic inhibition, H1239

role in pHi regulation in macrophage J774A.1 murine cells, C210

role in pHi regulation in vascular smooth muscle, C580

in vascular smooth muscle, in normotensive vs. hypertensive rats, C14

Sodium/hydrogen exchangers

NHE1 and NHE3, ontogeny in renal cortex and effects of glucocorticoids, F815

NHE-1, G protein-coupled regulation, C101

in proximal tubule

postnatal maturation, effects of prenatal cortisol on, F710

role in proximal tubule pHi regulation, F179, F193

regulation, activation, structure, membrane sorting (review), C283

Sodium-phosphate cotransport

inhibition by epidermal growth factor in opossum kidney epithelial cells, F309

in proximal tubule brush-border mem-

defects in murine X-linked hypophosphatemia (review), F357

Sodium-phosphate cotransporters, renal

coordinate regulation with parathyroid hormone receptor, F1017

dietary phosphate-regulated, cloned sequence, F626 in mouse, cloning, genetic mapping, and

expression analysis, F1038 parathyroid effects on, F784

in X-linked Hyp mice, dietary restriction effects on, F1062 Sodium-phosphate symport

renal, role of β-nicotinamide adenine

dinucleotide, C741 Sodium-phosphate transporter

renal, adaptation to phosphate deficiency, effects of hypophosphatemia, G917

Sodium-potassium cotransporter, renal

in X-linked Hyp mice, effects of dietary Pi restriction, F1062

Sodium-potassium pump (sodium-potassium ATPase)

α- and β-subunits, upregulation by glucocorticoid in proximal tubule cell, F862

thyroid-induced changes, effects on action potential duration, H1838 in ventricular myocytes, palmitoylcar-

nitine effects on, H2405 creatine kinase-coupled, role in ion transport and energy metabolism in

marine fish gill, R1003 and digoxin effects on energy expenditure and nutrient oxidation rate,

endothelial-cell energetics, H351 inward transport of proton, C590 modulation by β-adrenergic agonists in type II alveolar cells, L983

in proximal convoluted tubule, protein kinase C effects on, role of oxygenation, C1277

relation to body mass and tissue metabolic rate, in mammalian liver and kidney, R641

relation to dopamine and protein phosphatase 1 in proximal tubule, F279

role in apical membrane repolarization after nutrient-induced depolarization, R1050

role in [Na<sup>+</sup>]<sub>i</sub> and [Ca<sup>2+</sup>]<sub>i</sub> regulation during cardiomyocyte metabolic inhibition, H1239

in thyroid follicular cells, thyrotropin effects on, C1252

in ventricular myocytes, angiotensinconverting enzyme inhibitor effects on, C366

Sodium/potassium pump current in ventricular myocytes, palmitoyl-Lcarnitine inhibition of, H1027

Sodium-potassium transport in skeletal muscle, effects of insulin-like growth factor I, E849

Sodium-potassium-chloride cotransport

in airway smooth muscle, L551 in cerebral microvascular endothelial cells, astrocyte effects on, C747

and mechanism of osmolality-stimulated atrial natriuretic peptide secretion, E476

and volume regulation in trabecular meshwork cells of eye, C1067

Sodium/proton exchange and sodium entry into distal convoluted tubule cells, F89

Sodium/proton exchanger isoforms in medullary thick ascending limb, F1224

osmotically activated, in smooth-muscle vs. Chinese hamster ovary cells, C147

Sodium-taurocholate

cotransport in hepatocyte basolateral membrane, effects of prolactin, G11

Solute and water efflux

from nonpigmented ciliary epithelial cells, mechanisms, C721

Solutes

capillary permeability to proteins, effects of atrial natriuretic peptide on, H1139

endothelial transport, and shear stress effects on hydraulic conductivity, H535

Solvent drag

in LDL crossing of high-permeability microvessel endothelium, H1982

Somatic afferents

effects on cardiovascular neurons of ventrolateral medulla, R1464

Somatolactin

effects on P<sub>i</sub> and Ca<sup>2+</sup> transepithelial transport in flounder proximal tubule, R577

Somatostatin

effects on glucagon secretion, proglucagon gene expression, and cAMP generation, E40

effects on thyroid-stimulating hormonesecreting cells, mechanisms, E558 gastric acid secretion regulatory mechanisms, G102

role in pancreatic enzyme secretion, E349

Somatostatin receptors

in hamster glucagonoma cells, functional characteristics, E40

in pancreatic acinar cells, effects of proximal small bowel resection, E343

SSTR<sub>3</sub>, on gastric smooth muscle, G739 subtype involved in regulating gastric acid secretion, G102

Somatosympathetic reflex nitric oxide effects on, R958

Somatotroph cells, see under Pituitary Somatotropin, see Growth hormone Sorbitol

osmotic regulation, F983

Spaceflight

effects on contractile protein fast and slow isoform mRNAs, C466

Spern

of boar, calcium channels in plasma membrane, characteristics and role in acrosome reaction, C1284

Spinal cord

dorsal horn, serotonin 5-HT<sub>1A</sub> receptors in, effects on exercise pressor reflex and substance P, H1577

effects of subfornical organ stimulation on paraventricular nucleus projections to spinal cord, R625

input from GI tract, integration in dorsal motor nucleus of vagus, G780

midthoracic transection, cardiovascular responses to visceral afferent stimulation, H2077

quadriplegia, complete vs. incomplete, heart rate variability in, effects of provocative maneuvers, H2239

raphe-spinal pathway, sympathoexcitatory influence, R1230

tachykinin receptors in, role in viscerastimulated cardiovascular reflexes, H526

thoracic, projections from cuneiform nucleus via rostral ventrolateral medulla, R752

Splanchnic afferent fibers

capsaicin-sensitive, role in enterogastric inhibition of gastric acid secretion, G286

Splanchnic artery

occlusion, shock from, tumor necrosis factor- $\alpha$  and E-selectin production, H1412

Splanchnic blood flow

hemodynamic effects of endotoxin shock, H1106

Splanchnic nerve

afferent fibers, role in neural signaling of gastric water absorption, R236 simulation, effects on release of VIP and catecholamines, R1449

Splanchnic tissues

role in postprandial thermogenesis and oxygen consumption, in men vs. women, E433

Spleen

blood flow, interleukin-1 effects on, role of sympathetic nerve fibers, R902 microvascular permeability, effects of thromboxane A<sub>2</sub> receptor activation, uptake of oxidatively modified chylomicrons, G709

SR-49059 (vasopressin V<sub>1a</sub> antagonist) effects on human vascular smooth muscle cells, H404

Staphylococcus aureus

stimulation of airway epithelial cell interleukin-8 for neutrophil recruitment, L85

Starling's hypothesis

role of colloidal molecules, H2133

Starvation

effects on blood-brain barrier permeability to glucose and ketone bodies, E1161

hepatic alanine uptake from, role of sensitivity to sulfhydryl groups, R598

impaired B-cell response to glucose, protective effects of succinic acid monomethyl ester, E580

Staurosporine

effects on bile acid inhibition of hepatocellular cAMP formation, G300

effects on oxidant-induced changes in tracheal epithelium, L284

effects on pulmonary vascular bed responses to vasoconstrictors, L532

Stem cells

and formation of crypt-villus axis, in mouse small intestine, G813

Stereociliary bundle

of acoustic hair cells, structure, function, and mechanotransduction (review), C1

Steroid hormones

secretion, role of L-type and T-type Ca<sup>2+</sup> currents, C985

Steroidogenesis, in adrenocortical cells

stimulation by unsaturated fatty acids, R1484

Steroids

androgenic, effects on left ventricular compliance and contractility, H1096 see also specific agent

Stilbenes

effects on gating activity of Cl<sup>-</sup> channels in proximal tubule epithelial cells, F323

Stimulus-secretion coupling in insulin secretion, early role of phos-

pholipase A<sub>2</sub> activation, C181

Stomach

acid secretion

bombesin-stimulated, inhibition by gastrin monoclonal antibody, G54 effects of platelet-activating factor, G889

enterogastric inhibition of, role of vagal and splanchnic afferents, G286 omeprazole-suppressed, timing of ulcer healing effects, G276

prolactin effects on, G431 regulation by somatostatin receptor

subtype 2, G102 vagally stimulated, effects of peptide YY, microinjection into brain stem

YY, microinjection into brain stem nuclei, G943 ntral G cells, specific expression of rat-

antral G cells, specific expression of rathuman gastrin chimeric transgene, G1025

antral pressures, relation to surface electrogastrography, G424

chief cells cholecystokinin subtypes on, G605

#### Stomach (continued)

nonsteroidal anti-inflammatory drug effects on pepsinogen and calcium, G968

digestive functions, vagovagal reflex control (review), G1

#### emptying

duodenal chyme transport patterns during fasting and postprandial states. G700

of nonnutritive liquid, effects of posture and gravity, G868

of oil and aqueous meal components, effects of posture and pancreatic insufficiency, G925

sex hormone effects on, G171

#### gastric ulcer

adverse effects of smoking, role of tobacco smoke attenuation of margin hyperemia, G153

effects of indomethacin, omeprazole, and ba 'c fibroblast growth factor on healing, G276

interdigestive migrating myoelectric complex, regulatory role of duodenal pH, G146

mechanics of phrenic ampullary emptying, G320

motility, secretin effects on, role of vagal afferent pathway, G1012

#### mucosa

adaptation to chronic aspirin doses, G134

restitution after injury, role of NO, G933

role of gastric fluid increase in adaptive cytoprotection from mild irritants, G200

uremia-induced hypertrophy, role of gastrin, G586

mucosal mast cells, ontogeny of degranulation and relation to mucosal permeability, G121

nitric oxide release, from central vagal activation by thyrotropin-releasing hormone, G895

oxyntic cell, intracellular pH, role of interstitial buffering, G496

#### parietal cells

aminopyrine accumulation, role of cAMP in gastrin and carbachol actions, G82

hydrogen-potassium ATPase β-subunit, expression in kidney, F363

omeprazole-induced changes (letter to the editor), G387

protein kinase A-activated Cl<sup>-</sup> channel, cloning, expression, and characterization, C191

sodium-potassium ATPase, α-subunit structure and functional expression, C1207

protective effect of raphe pallidus kainic acid, role of medullary thyrotropinreleasing hormone, G548

slow wave dysrhythmias, from motion sickness, role of cholinergic and α-adrenergic pathways, G539

submucosal arterioles, sensory neuroninduced vasodilation, roles of NO and calcitonin gene-related peptide, G791

surface cell cytotoxicity, neutrophil-mediated, role of interferon-y, G843 uptake and interconversion of plasma n-3 polyunsaturated fatty acids, G732

vagal gastric mechanoreceptors, effect of cholecystokinin on, G355

water infusion, vasopressin inhibition by, neural signaling mechanism, R236

#### Strain

increase in fetal lung cells from, role of phospholipases C and D and protein kinase, L729

#### Streptozotocin

diabetes from, effects of brain serotonin depletion, E839

diabetes from, effects on peripheral nerve endothelium and perineurium, H740

effects on endothelial-dependent vasodilation in Zucker diabetic rat, H2366

#### Stres

see also Heat stress; Oxidative stress emotional, intestinal motility from

GABA<sub>A</sub> receptor blockade in hypothalamic dorsomedial nucleus, G514

hypoxemic, in fetus, effects on hypothalamic corticotropin-releasing hormone and vasopressin, E1096

metabolic effects during fed state and role of interleukin-1, E255

metabolic, hyperglycemia from, effects on autoregulation of hepatic glucose production, E630

physical, effects on airway smooth muscle contractile enzyme activity, L999

#### Stress fibers

interaction with membrane, and tracheal smooth muscle contraction, C563

#### Stroke

ischemic

brain glucose utilization rates in active and hibernating squirrels, R445 lactic acid-induced delayed neuronal death in, role of intracellular calcium, R506

#### Stroke volume

effects of vasotocin, atrial natriuretic peptide, and epinephrine in eels, R1273

# Stromal cells

pulmonary, stimulus- and cell-specific chemokine expression, L856

### Stromelysin

expression in lung, effects of 85% O<sub>2</sub>,

# Submandibular gland

salivary and vasodilator responses, role of chorda tympani afferents, R438

#### Submucosal glands

in distal airways, relation to transepithelial Cl<sup>-</sup> secretion, L526

# Substance P

activation of Ca<sup>2+</sup> influx in coronary endothelial cells, mechanism, H962 in dorsal horn, effects of serotonin<sub>1A</sub> re-

ceptor agonist on, H1577 effects on acetylcholine release from a

effects on acetylcholine release from airway smooth muscle nerve endings, L432

effects on human lung fibroblast proliferation and chemotaxis, L278 increased microvascular permeability from, role of nitric oxide and neurokinin receptors, R1060

sensory neurotransmitter role in gallbladder-stimulated cardiovascular reflexes, H526

and tachykinin receptors as mediators of canine ileal motility, G161

#### Substance P receptors

NK-1-type, distribution in respiratory tract, L584

# **Substrate oxidation**

use of [13C]bicarbonate infusion for measuring, E1123

#### Substrates, see Metabolic substrates Succinate dehydrogenase

activity in self-reinnervated muscle, C527

# Succinic acid monomethyl ester

protection against starvation-impaired pancreatic responsiveness to glucose, E580

vs. D-glucose, pancreatic B cell secretory responses, C611

#### Sucrase

ontogenic intestinal changes, normal vs. glucocorticoid-accelerated, 5-bromo-2'-deoxyuridine effects, G139

#### Sulfated iodothyronines

production and metabolic clearance in selenium deficiency, E572

#### Sulfobromophthalein, see Bromosulfophthalein

#### Sulfonylurea drugs

extrapancreatic action, tolbutamide modulation of 6-phosphofructo-2kinase/fructose-2,6-bisphosphatase, E391

#### Superoxide anion

see also Peroxynitrite

generation by NADPH oxidase in aorta, H2274

role in oxidant effects on tracheal epithelial barrier function, L284

role in oxidized chylomicron-induced leukocyte-endothelial cell adhesion, H2175

### Superoxide dismutase

copper- and zinc-containing role in oxidant-induced injury to cardiomyocytes, H1115

cytokine-induced in bronchial epithelial cells, effects on later oxidant exposure, L71

delivery to pulmonary epithelial cells via surfactant protein A-carrying, pHsensitive liposomes, L374

effects on oxidase-induced hepatic microcirculatory changes, G47

galactosylated, recognition by liver, G849

manganese superoxide dismutase, mitochondrial, effects of chronic hypertension, H1418

role in pulse-pressure inhibition of acetylcholine-induced vascular relaxation, H359

#### Superoxide radicals

effects on cardiomyocytes, role of intracellular copper- and zinc-containing superoxide dismutase, H1115

#### Surfactant

biosynthesis, glucocorticoid-stimulated fatty-acid synthase gene transcrip-

tion in fetal lung, retinoic acid effects, L683

biosynthetic enzymes, effects of  $H_2O_2$  in type II cells, L129

clearance by alveolar macrophages, L772 metabolic subtypes, small vesicles vs. tubular myelin, effects of  $\alpha_1$ -antitrypsin levels, L438

secretion by type II cells, regulation by ATP, role of protein kinase C, L108

Surfactant convertase

and effects of α<sub>1</sub>-antitrypsin levels on small vesicular vs. tubular myelin surfactant metabolic subtypes, L438 Surfactant phospholipid

effect of oxygen dose on mRNA expression in fetal lung cells, L818

#### Surfactant proteins

SP-A

interactions with bacterial endotoxin in alveolar macrophages and type II cells. L144

molecular advances (review), L162 for targeting pH-sensitive, antioxidant-containing liposomes to pulmonary type II cells, L374 uptake and metabolism by alveolar

macrophages, L772

SP-A, SP-B, SP-C, effect of oxygen dose on mRNA expression in fetal lung cells, L818

SP-B

clearance from lung, L636

developmental and hormonal gene expression, roles of transcription and mRNA stability, L481

gene promoter characteristics, L674 hereditary deficiency, aberrant SP-C peptide, L647

mouse gene for, nucleotide sequence and comparison with human gene, L381

SP-C, aberrant processing in hereditary SP-B deficiency, L647

Surfactant-like particles

apical appearance, role of tight junctions, C1401

appearance and secretion in parallel with intestinal alkaline phosphatase, E1205

SV40-immortalized cells

proximal tubular, renin-angiotensin components in, F435

Swallowing

aging effects on oral-pharyngeal and upper esophageal sphincter function, G389

mechanics of phrenic ampullary emptying, G320

nasopharygeal closure, mechanism and timing, G1037 oropharyngeal, in cat, videofluoroscopy

and electromyography, G232 relation to transient lower esophageal sphincter relaxation, G128

Sweating

heat-induced, osmoregulatory modulation in humans: reflex effects of drinking, R414

Sweet taste receptors

gurmarin effects on chorda tympani nerve responses to sweetness in C57BL vs. BALB mice, R1019

Swelling-activated transport, see Cell volume regulation Sympathectomy

and antihypertensive effect of vasopressin withdrawal, H1

chemical, effects on neonatal stress responses and adrenal sensitivity to ACTH, R1281

Sympathetic nerves

hepatic, role in exercise-induced rise in hepatic glucose production, E636 renal, role in renin response to exercise, E636

Sympathetic nervous system

see also Renal nerves, sympathetic aging effects on, norepinephrine kinetics and metabolism, R278

of brown adipose tissue, effects of NO inhibition, R1533

cardiac, synergy with left atrial stretch in atrial natriuretic factor release, H1405

and central respiratory drive effects on barosensitivity of rostral ventrolateral medulla, R909

in control of heart rate, changes in left ventricular dysfunction and heart failure, R310

coronary vasoconstriction from, role of ATP-sensitive K channels, H1077

cuneiform nucleus activation of rostral ventrolateral medullary sympathoexcitation, R752

depressed baroreflex control in left ventricular dysfunction, H218

differential innervation of internal vs. external white fat pads in hamster, R744

effects of area postrema stimulation and changes with anesthesia, H1086 effects of vena caval occlusion-induced

hypotension, R859 and hemodynamic responses to vasopressin during  $V_1$  receptor blockade,

R156 and hepatomesenteric release and removal of norepinephrine, R924

medullary ventrolateral and dorsomedial vasomotor neurons, hyperreactivity in hypertensive rats, H1499

muscle metaboreflex, role in restoring blood flow to ischemic active muscle, H980

nitric oxide effects on rostral ventrolateral medulla, R958

postganglionic, relations between cardiac-related discharges, R1472 preganglionic,

excitatory drive from raphe obscurus, R1230

vestibular input, required brain stem projections, R1381

pulmonary vs. renal, baroreflex effects on, R1078

reflex inhibition, role in vasodilation of pregnancy, R736

renal

in cardiac failure: arterial vs. cardiac baroreflex defects, R112

in cirrhosis, arterial and cardiopulmonary baroreflex control, R117

responses evoked from caudal raphe nuclei, R1295 in Wistar and spontaneously hyper-

tensive rats, insular cortex-mediated responses, R214 role in hypertension from chronic NO synthase inhibition, H2267

role in interleukin-1 effects on splenic blood flow, R902

role in long-term arterial pressure regulation, R1343

role in proneness to diet-induced obesity, R389

of skeletal muscle, responses to graded head-down tilt, R1289

stimulation of salivary secretion effects of clonidine and yohimbine, R1196

subthreshold effects on reflex parasympathetic salivation, R1188

stimulation-induced smooth muscle tone, effects on arterial mechanics, H794

Sympathetic neurons

intracellular calcium levels in, effects of muscarinic agonists, C829

Sympathetic reflexes

activation by reactive oxygen species during myocardial ischemia-reperfusion, H2114

Syndrome X (angina-like chest pain with normal arteries)

endothelin vs. stenosis effects on myocardial flow distribution, H1276

System A

transport in vascular smooth muscle cells, stimulation by microtubule disruption, C1512

System y+

arginine transport capacity, regulation in differentiating Caco-2 cells, G578

lysine transport by placental microvillous membrane vs. basal membrane, C755

role in L-arginine transport by aortic smooth muscle cells, H1158

T

T cells

gastrin-cholecystokinin-B receptors on J.RT3-T3.5 Jurkat cells, G522

maturation in thymus, roles of dehydroepiandrosterone and calcitonin gene-related peptide in, E168

T84 cells, see Epithelial cells, intestinal (T84) Tachycardia, see under Arrhythmias

Tachykinin receptors NK<sub>1</sub>

and acetylcholine release from airway smooth muscle nerve endings, L432 role in neutrophil and eosinophil adhesion to tracheal endothelial cells, L263

NK<sub>1</sub> and NK<sub>2</sub>, as mediators of canine ileal motility, G161

NK<sub>1</sub>, NK<sub>2</sub>, role in spinal transmission of viscera-stimulated cardiovascular reflexes, H527

**Tachykinins** 

and inflammatory changes in enteric neural regulation of smooth muscle, G823

Talin

phosphorylation during acetylcholineinduced tracheal smooth muscle contraction, C563

#### Tannin

in arachidonic acid release from alveolar macrophages, role of calcium influx,

effects on cAMP production and adenylate cyclase in airway epithelial cells, L851

#### Tarui's disease

mechanism of skeletal muscle contracture, C317

response to acid, chorda tympani nerve response to HCl under voltage clamp, C1295

#### Taste reactivity

gurmarin effects on chorda tympani nerve responses to sweetness in C57BL vs. BALB mice, R1019

#### **Taste-aversion conditioning**

effects of parabrachial nucleus lesions on, R676

to amino acid-imbalanced diet in rat, role of serotonin<sub>3</sub> receptor, R1203

#### Taurine

osmotic regulation, F983

permeability of proximal tubule basolateral membrane and effects of hypotonicity, F595

#### **Taurocholate**

cotransport with sodium in hepatocyte basolateral membrane, effects of prolactin, G11

sodium-independent hepatic uptake in skate, G18

#### Taurocholic acids

effects on hepatocellular cAMP formation, G300

#### TCA cycle, see Citric acid cycle **Teaching methods**

andragogical vs. pedagogical, S66

# Temperature

ambient

brown fat and skeletal muscle responses to cold, effects of aging and gender, R931

cold acclimation, effects on gluconeogenic response to norepinephrine and glucagon, E1184

effects on ion channels in CFTRmutant airway cells, C243

effects on secretagogue-induced changes in serum prolactin and growth hormone, E758

elevated, effect on sleep, EEG, and brain temperature, R1365

induced febrile response for increasing cold tolerance, metabolic effects of total body cooling, R1257

# body

see also Fever; Thermogenesis; Thermoregulation

brain glucose utilization rates in active and hibernating squirrels, R445 circadian rhythm in rat, effects of continuous light, R1111

effect on exercise-induced muscle HSP70 levels, R92

effects of interleukin-1B, tumor necrosis factor-a, and both, E551

effects of ramplike total body cooling in fever from poly I:C, R1257

endotoxin-induced transient hypothermia, roles of macrophages and TNF-α. R989

physiology of heat regulation (editorial opinion), R838

tissue-specific HSP72 response, R28 of brain, during sleep, effects of endotoxin on, R1310

hypothalamic, elevated ambient temperature effects on sleep, EEG, and brain temperature, R1365

myocardial, effects on atrial natriuretic peptide release, H2352

of skin, effect on capillary pressure physiology in healthy adult volunteers, H147

#### Tenascin

alternative-splicing expression in fetal lung, role of transforming growth factor-β, L173

#### **Tension development**

relation to pHi in vascular smooth muscle, C580

#### Testosterone

effects on brain damage and mortality from hyponatremic encephalopathy, R1143

effects on gastric emptying and gastrointestinal transit, G171

levels in sleep, dehydroepiandrosterone effects on in humans, E107

#### Tetraethylammonium

basolateral transport, relation to membrane potential in snake proximal tubule, R1539

binding site in K+ channels, C535 hepatic lysosomal uptake and transport, G480

#### Tetramethylammonium

as cardiac muscarinic agonist, C1414

### Tetrodotoxin

effects on veratridine-evoked pancreatic amylase secretion and c-fos expression, G339

# **B-Thalassemia**

hepatic fibrosis in, and iron-induced lipocyte activation, G451

# Thermal stress, see Heat stress

Thermogenesis

in brown adipose tissue, effects of corticosterone, R183

effects of NO inhibition, R1533 feeding-induced, aging effects on, E1083

in marsupial skeletal muscle, vasoconstrictor effects on oxygen, lactate, and glycerol metabolism, R1217

norepinephrine- and β-agonist-induced, in guinea pig brown fat cells, R98 postprandial, role of skeletal muscle vs.

splanchnic tissue in men vs. women,

in suckling Zucker rats, and β-adrenoceptor agonist effects on obesity, E1039

#### Thermogenin, see Uncoupling protein Thermoregulation

brown fat and skeletal muscle responses to cold, effects of aging and gender, R931

interaction with osmoregulatory system,

physiology of heat regulation vs. temperature regulation (editorial opinion), R838

relation between sleep and brain temperature, R1365

and sex differences in blood flow distribution, R66

### Thermosensitivity

during fever from poly I:C and effects of square-wave total body cooling,

#### Thirst

#### see also Water intake; Water deprivation

angiotensin III central effects on caudal hypoglossal neurons and role of angiotensin receptor AT1, R1242

attenuation during head-out immersion in water, role of plasma volume vs. osmolality, R583

brain mechanisms, effects of ethanol drinking, R1526

osmo- and thermoregulation in dehydrated humans, R414

#### o-Thrombin

effects on endothelial thrombin receptor, C36

effects on vascular smooth muscle cell migration, C1195

plasmin effects on binding and on platelet cytosolic [Ca2+], C958

vascular smooth muscle cell proliferation from, delayed kinetics, C1141

#### Thrombin receptor activating peptide

effects on endothelial thrombin receptor, C36

role in ventricular arrhythmias during myocardial ischemia, H1740

#### Thrombin receptors

endothelial, effects of a-thrombin and thrombin receptor-activating peptide, C36

# Thrombolysis, see Platelets

Thrombomodulin

in endothelial cells, effects of TNF-a and role of cAMP levels, C1104

# Thromboxanes

A2, effects on body fluid compartmentation, R366

A2, role in platelet-activating factor effects on vascular resistance and capillary permeability, H1954

B2, release from endothelial cells under varying oxygenation states, H749 role in peroxide-induced retinal vasoconstriction, H628

# **Thrombus formation** potassium effects on, R825

#### **Thymocytes**

mitogen-stimulated proliferation, effects of dehydroepiandrosterone and calcitonin gene-related peptide, E168

roles of dehydroepiandrosterone and calcitonin gene-related peptide in thymocyte maturation, E168

# Thyroid cells

FRTL-5 cell line, TGF-β synthesis and secretion, effects of TNF-α, TSH, and aging, R808

### Thyroid gland

effects of selenium deficiency on tissue type I 5'-monodeiodinase, E572

effects on ventricular action potential duration, role of thyroid-induced changes in Na<sup>+</sup>-K<sup>+</sup> pump, H1838 follicular cells, Na<sup>+</sup>-K<sup>+</sup>-ATPase in, thy-

rotropin effects on, C1252

iodide channel, characterization in liposomes, C111

- over- or underactive, effects on potassium currents in ventricular myocytes, H576
- overactive, effects on muscle blood flow during exercise, H330
- underactive, and exercise training, effects on vascular reactivity, role of endothelium and smooth muscle cells, H1428

# Thyroid hormones

see also Hyperthyroidism

- and hormone-induced differentiation of Na<sup>+</sup> transport across larval bullfrog skin, C218
- and metabolic adaptations to reduced food intake in desert survival, R1101
- role in developmental regulation of mitochondrial oxidative enzymes in newborn proximal convoluted tubule, F634
- role in embryonic coronary neovascularization, H811
- role in fetal pituitary growth hormone expression, E262
- sulfation of, in selenium deficiency, E572
- sulfoconjugated metabolites in fetus, appearance in maternal urine, E33
- thyroxine cardiac hypertrophy from, effects on myocardial O<sub>2</sub> consumption and cGMP level, H686
- coronary angiogenesis from, effect of aging on, H419
- effects on lung, diaphragm, tongue, and heart in dystrophic hamster, R779
- effects on postischemic ATP production in renal mitochondria, F651 and sex hormone-binding globulin,
- seasonal plasma level changes in male little brown bats, R1303 thyroxine 5'-deiodinase, and brown fat and skeletal muscle responses to
- thyroxine 5'-deiodinase, and brown fat and skeletal muscle responses to cold, effects of aging and gender, R931
- triiodothyronine and thyroxine, pituitary uptake, effects of furan fatty acid and indoxyl sulfate, E974
- triiodothyronine, effects on maturation of bile acid metabolism, E889
- triiodothyronine, stimulation of renal epidermal growth factor, F128
- Thyroid-stimulating hormone effects on Na\*-K\*-ATPase in thyroid follicular cells, C1252
  - effects on TGF-β synthesis and secretion in young vs. aged FRTL-5 thyroid cells. R808
- pituitary release, effects of furan fatty acid and indoxyl sulfate, E974 secretion, somatostatin effects on,

# mechanisms, E558 Thyrotropin, see Thyroid-stimulating hormone

- Thyrotropin-releasing hormone central vagal activation by TRH analogue, effects on gastric NO, G895
- gastric acid secretion from, inhibitory effect of intestinal acid, G286 medullary, role in gastroprotective effect
- of raphe pallidus kainic acid, G548 and peptide YY effects on gastric acid secretion, G943

- plus serotonin, effects on neurons of vagal dorsal motor nucleus, G292
- role in vagovagal reflex control of digestion, G1
- and somatostatin effects on thyroidstimulating hormone-secreting cells, E558

# Thyroxine-binding globulin

as aging biomarker, R536

- and seasonal changes in sex hormonebinding globulin and thyroxine plasma levels in male bats, R1303
- **Tight junctions** 
  - epithelial, and lingual trigeminal nerve sensitivity to acids, R58
  - formation in glomeruli, role of tyrosine phosphorylation of protein ZO-1, F514
  - intestinal epithelial
  - effects of enteropathogenic E. coli, G374
  - effects of nitric oxide on, G361
- role in apical appearance of surfactantlike particles, C1401
- role in oxidant effects on tracheal epithelial barrier function, L284

### Tirilazad mesylate

effects on hemodynamics and oxygen extraction in endotoxic shock, H1847

- Tissue plasminogen activator
  - in L2 rat yolk sac carcinoma cell line, C442
  - in platelets, release by insulin, H117

#### Tobacco, see Cigarette smoke Tolbutamide

inhibition of glucagon-induced phosphorylation of 6-phosphofructo-2kinase/fructose-2,6-bisphosphatase, E391

### Tone

see also Vascular tone; Vagal tone colonic, responses to eating, nutrients, and simulated diarrhea, G95

#### Tongue

- chorda tympani afferents, role in reflex submandibular salivation and vasodilation, R438
- necrosis in dystrophic hamster, thyroxine effects on, R779
- trigeminal nerve, sensitivity to acids, factors affecting, R58

## Tonicity

effect on anion exchangers AE1 and AE2 in Xenopus oocytes, C201

#### **Total arterial compliance**

analysis of seven methods for estimating based on windkessel models, H1540

# Total body water, see Water

Total peripheral resistance
effects of long-term endothelin infu-

#### sions, R375 Trachea

- see also Epithelial cells, tracheal; Muscle, smooth, airway
- calcium-activated potassium channels, role in NO-mediated relaxation, L152
- cyclic nucleotide-induced relaxation, role of sarcoplasmic reticulum Ca<sup>2+</sup> ATPase, L407
- effects of endotoxin, cytokine-induced neutrophil chemoattractant, and anti-CINC, L245

- eosinophil chemotaxis in and narrowing of, effects of inhibiting 5-lipoxygenase and cyclooxygenase, L446
- epithelial barrier function, oxidant effects on permeability and repair, L284
- gap junction distribution, changes with postnatal development, L576
- muscarinic receptors, subtype distribution and effects on adenylyl cyclase, L101
- neurogenic inflammation, role of neurokinin receptors in leukocyte-endothelial adhesion, L263
- neutrophil recruitment by Staphylococcus aureus stimulation of airway epithelial cell IL-8, L85
- parasympathetic nerves, acetylcholine release from
  - β-adrenoceptor effects on, L950 catecholamine effects on, L368
- perichondrial localization of endothelin ET-1/ET<sub>A</sub> receptor system, C496
- smooth muscle contraction and phosphorylation of actin-mem
  - brane attachment proteins, C563 relation between stiffness and force during, and role of cross bridges,

# Transcription factors

C1267

activation in mononuclear cells, effects of glucocorticoids on, C331

#### Transcytosis

caveolae-mediated, inhibition by N-ethylmaleimide, H48

#### Transduction channels

- of acousticolateralis system, stereociliary bundle structure and function (review), C1
- Transepithelial electrical resistance in T84 cells, effects of enteropathogenic E. coli, G374

# Transepithelial resistance response to tumor necrosis factor-α

role of cAMP and protein kinase A, F315 Transforming growth factors

#### TGF-β

- effects on endothelin-1 release by alveolar epithelial cells, L192
- regulation of NO production in pulmonary smooth muscle cells by inhibiting NO synthase expression, L862
- role in alternative-splicing expression of fetal lung tenascin, L173
- role in insulin modulation of bronchial epithelial cell fibronectin production, L230
- role in osteoblastic ascorbate uptake and steady-state levels, E565
- secretion from neonatal cardiac fibroblasts, effects of norepinephrine and angioensin II, C910
- synthesis and secretion, in young vs. aged FRTL-5 thyroid cells, effects of TNF- $\alpha$  and TSH, R808
- TGF-β<sub>1</sub> and β<sub>2</sub>
- cytokine-binding proteins in lung (review), L869

#### TGF-β<sub>1</sub>

- expression in lung, effects of 85% O<sub>2</sub>, L.78
- in neonatal ureteral obstruction, regulation by  $AT_1$  receptors, F1117

#### Transforming growth factors (continued)

vs. insulin, regulation of insulin-like growth factor binding protein-2, E1199

#### Transgenic mice

with bovine growth hormone gene plus metallothionein-I or phosphoenolpyruvate carboxykinase gene, E745

#### Transient inward currents, see under Ion currents; Potassium currents

#### Transient outward currents, see under Ion currents; Potassium currents

Transplantation

autografts of transformed muscle, skeletal muscle response to mechanical stimuli, E288

of liver, effects of denervation on hepatic response to glucagon, E194

# Transport

see also Ion transport; Vesicular transport and specific substances

basolateral, sodium-independent organic anion uptake in skate liver, G18

endothelial, and shear stress effects on hydraulic conductivity, H535 excretory, P-glycoprotein-mediated

proximal tubular secretion of cyclosporin analog, F46

hepatic lysosomal uptake and transport of organic cations, G480

of organic anions, hepatocyte basolateral dicarboxylate/cholate antiport system, G797

osmotically activated, in smooth-muscle vs. Chinese hamster ovary cells, C147

paracellular, cervical cell nucleotide receptors with opposing effects on permeability, C1215

placental, of amino acids (review), C1321 placental, of amino acids (review), C1321 potassium, sodium, and electrogenic, in cortical collecting ducts, effects of basolateral metabolic acidosis, F490

in proximal nephron, inhibition by atrial natriuretic factor, role of angiotensin II, F730

in proximal tubule S3 segment, acid extrusion and  $\mathrm{CO_2/HCO_3^-}$  alkalinization in pH<sub>i</sub> regulation, F179, F193

renal concentration mechanism mathematical model, effect of vasa recta flow, F698

mathematical model, F680, F693 renal, of organic substrates, effect of heat shock on daunomycin excretion, F135

through jejunum, ectopic pacemakers after transection, relation to transit, G959

transmembrane, of skeleta' muscle amino acids, E75

vesicular, of glucose, in enterocyte brush-border membrane vesicles, polyamine effects on, G416

of water across membranes role of hydrostatic pressure (August Krogh lecture), R1087

of water and solutes

seasonal variations in capillary hydraulic conductivity and volume status in frogs, R468

#### **Transporters**

multifunctional

lessons from GLUTs (review), C1077

#### Trauma

hyperglycemia from, effects on autoregulation of hepatic glucose production, E630

insulin-like growth factors and IGF binding proteins, persistent posttraumatic changes, R970

#### Trehalase

ontogenic intestinal changes, normal vs. glucocorticoid-accelerated, 5-bromo-2'-deoxyuridine effects, G139

#### Triacylglycerols

low-protein diet during pregnancy, effects on insulin actions, E722 postprandial clearance in adipose tissue, impairment in obesity, E588

# Tricarboxylic acid cycle

and lactate production in vascular smooth muscle metabolism, H713

and estrogen and progesterone effects on liver mitochondria, G107 in small intestine, effects of glutamine,

#### G879 Trigeminal nerve (lingual nerve proper)

and chorda tympani-induced submandibular salivation and vasodilation, R438

sensitivity to acids, R58

#### **Triglycerides**

exercise effects in skeletal muscle vs. adipose tissue, E229

structured, effects of fatty acid type and position on absorption and lymphatic transport, G568

#### Trophoblast

bile acid transport from fetus to maternal blood, G685

#### Tropoelastin

expression during fetal lung development, effect of dexamethasone on, L491

#### Tropomyosin

zero gravity effects on fast and slow isoform mRNAs, C466

# Troponins

C, binding by Ca<sup>2+</sup>, nonrole in caffeine effects on cardiac myofilaments, C1348

I, isoforms and differential myofilament pH sensitivity, C323

zero gravity effects on fast and slow isoform mRNAs, C466

### Trypanosoma cruzi

effects on epicardial myocyte phase 1 repolarization and transient outward K<sup>+</sup> current, H1258

#### Trypsin

activation in pancreatitis, role of ATP and glutathione decrease, G592

# β-Tubulin

in pancreatic acinar cells, effects of supramaximal secretagogue stimulation, G328

# Tubulogenesis

hepatocyte growth factor-mediated, requirement for phosphatidylinositol 3-kinase, F1211

#### Tubuloglomerular feedback mechanism

and cGMP-dependent dilator effects on preglomerular vasculature, F338

#### Tumor necrosis factor

arterial wall production, effects of aging and endotoxin, H2288

in endotoxic shock, effects of antioxidant U-74006F, H1847

negative inotropic properties, effects of TNF binding proteins on, H517

role in E-selectin production in splanchnic artery occlusion shock, H1412

#### Tumor necrosis factor-a

alone and with IL-1β, effects on hypothalamic-pituitary-adrenal axis, E551

cytokine-binding proteins in lung (review), L869

effects on airway ciliary motility, L911 effects on endothelial barrier function, role of cAMP levels, C1104

effects on endothelin-1 release by alveolar epithelial cells, L192

effects on neutrophil-glomerular endothelial cell interactions, F1

effects on nitric oxide synthase expression in inner medullary collecting duct cells, F770

effects on TGF-β synthesis and secretion in young vs. aged FRTL-5 thyroid cells, R808

endotoxin-induced, in lung, ethanol effects on, L991

febrile response to, effects of endotoxin tolerance on, R514

hepatic, E. coli-induced, effects of hypoxia-reoxygenation, G311

hepatic production, epinephrine effects on, R896

levels in bronchoalveolar lavage, effects of anti-cytokine-induced neutrophil chemoattractant antiserum, L245

lung and plasma levels during acute phase response to influenza A virus, R78

metabolic effects during fed state, E255 plus IL-1 $\beta$  and IFN- $\gamma$ , astroglial nitrite formation from, effects of angiotensin II on, C700

release from glomerulosa cells and factors regulating release, E114

role in endotoxin-induced transient hypothermia, R989 role in zymosan-induced changes in glu-

cose and insulin, E219

site of antipyretic actions in endotoxininduced fever, R480 superoxide dismutase induction in bron-

chial epithelial cells, effects on later oxidant exposure, L71

transepithelial permeability regulation by, role of cAMP and protein kinase A, F315

and vagovagal reflex control of digestion, G1

#### Tumor necrosis factor binding proteins

effects on tumor necrosis factor- $\alpha$  negative inotropic properties, H517

#### Tumors

cachexia from, muscle proteolysis in, role of ATP-ubiquitin-proteasome pathway, E996

malignant mesothelioma cells, urokinase receptor role in tumor cell mitogenesis and proteolysis, L972 stimulatory effects of hepatocyte growth factor on bronchial epithelial cells, L1012

#### Turtle brain

upregulation of GABA<sub>A</sub>/benzodiazepine receptor during anoxia, R1332

#### Tyrosine

metabolism in cardiac development, H56

#### Tyrosine hydroxylase

effects of REM sleep deprivation, R1456

# Tyrosine kinases, see Protein tyrosine kinases

# Tyrosine phosphatase

inhibition, effects on CFTR, C886

# Tyrosine phosphoproteins

in skeletal muscle, effects of contraction on, E987

# Tyrosine phosphorylation

of tight junction protein ZO-1, in glomerular tight junction formation, F514

# Tyrosine protein kinase, see Protein tyrosine kinases

#### U

# U-74006F (antioxidant)

effects on hemodynamics and oxygen extraction in endotoxic shock, H1847

#### Ubiquitin

role in skeletal muscle proteolysis in cancer-associated cachexia, E996

#### Ultradian rhythms

relation to circadian rhythms, R253

#### Ultraviolet B

inducible keratinocyte genes, identification and mechanisms, C846

# Umbilical artery

impaired cyclic nucleotide-dependent vasorelaxation, H202

# Umbilical vein

blood flow, effects of reduced uterine blood flow, R303

endothelial cells, hormone-induced cAMP production, bile acid effects on, G908

# Uncoupling protein

in brown adipose tissue
effects of corticosterone, R183
glucocorticoid and insulin effects,
R1209

in brown adipose tissue, effects of  $\beta_3$ -adrenergic agonist BRL-35135 in obese mice. E678

and brown fat and skeletal muscle responses to cold, effects of aging and gender, R931

#### Urea

activation of K-Cl cotransport in erythrocytes

in humans, C1018

significance for swelling-activated transport, C1026

effects on phosphatidylcholine catabolism in renal cells, C402 hepatocyte production, nitric oxide ef-

fects on, G183 transport in inner medullar collecting ducts, effects of low-protein diet, F1218

#### Urea cycle

intermediate metabolism in humans, E360

#### Uremi

furan fatty acid and indoxyl sulfate effects on pituitary uptake of thyroid hormones, E974

#### Ureteric bud

metanephric apoptosis and kidney maldevelopment in bcl-2-deficient mice, F73

#### Urethan

hypocalcemia from, and effects of parathyroid hormone on calcium blood levels, R21

#### Uric acid

insulin effect on plasma levels and renal excretion in humans, E1

# Urinary bladder

histone-induced epithelial damage, C1114

vesicle fusion proteins in, C792

#### Urine

calcium oxalate monohydrate crystal adhesion to renal epithelial cells, inhibition by urinary anions, F604

### concentration

inner medullary collecting duct adaptation to dehydration, F53

mathematical model of renal inner medulla, effect of vasa recta flow, F698

mathematical model of renal inner medulla, F680, F693

excretion of organic osmolytes after water loading and water deprivation, F227

fetal production, and endocrine levels, after hypoxemia from reduced uterine blood flow vs. maternal  $N_2$  inhalation. F868

α-ketoacids as H<sub>2</sub>O<sub>2</sub> scavengers, C227 nitrogen excretion, measuring whole body protein synthesis via <sup>13</sup>CO<sub>2</sub> vs. plasma precursor techniques, E174

retrograde transport in fowl, role of colonic motility and effects of urine flow rate and osmolality, R690

#### Urine flow

effects of vasopressin  $V_1$  receptor stimulation, R796

effects of vertebral artery-infused angiotensin II, F296

in fetus, effect of maternal 1-desamino-[D-Arg<sup>8</sup>]vasopressin-induced hyposmolality, R358

#### Urodilatin

chloride channel activation, in proximal convoluted tubule, role of cGMP, F323

#### Urokinase

and plasminogen system in L2 rat yolk sac carcinoma cell line, C442

#### Urokinase plasminogen activator receptor

force transmission and coupling to cytoskeleton, C1062

#### Urokinase receptor

force transmission and coupling to cytoskeleton, C1062

role in thrombin-induced vascular smooth muscle cell migration, C1195

role in tumor cell mitogenesis and proteolysis, L972

#### Uterine artery

neurogenic constriction and dilation, effects of pregnancy on, H1694

#### Uterine cervix

epithelial cells, nucleotide receptors with opposing effects on permeability, C1215

#### Uterus

blood flow, measuring endometrial vs. myometrial blood flow in small animals, R569

gestational quiescence and excitability, and estrogen effects on myometrial Ca channel currents, C64

hemodynamics in pregnancy, effects of sleep and nonlabor myometrial activity, H1734

myometrial smooth muscle cells, type A endothelin receptors in, E825

oxygen, glucose, and lactate uptake, effects of hypoxemia, R303

prelabor distal vs. proximal contractions, relation to parametrial arterial flow velocity, R614

#### 1

#### Vagal afferent fibers

capsaicin-sensitive, role in enterogastric inhibition of gastric acid secretion, G286

responses to gastric distension and cholecystokinin, G355

### Vagal afferent pathway

role in secretin effects on gastric motility, G1002

# Vagal mechanisms

in control of heart rate, changes during left ventricular dysfunction and heart failure, R310

stimulation of pancreatic β-cells, role in glucose homeostasis after hyperglycemia, R475

#### Vagal reflexes

activation by reactive oxygen species during myocardial ischemia-reperfusion, H2114

# Vagal tone

cardiac, role in carotid baroreflex-induced heart rate changes, H1208

# Vagotomy

effects on induction of brain IL-1β mRNA by peripheral endotoxin, R1327

effects on pressor-induced responses of ventral medullary surface, R324

# Vagovagal reflexes

and control of digestion (review), G1

# Vagus nerve

see also Brain, dorsal motor nucleus of vagus

afferent buffering systems, immaturity in fetus, and hormonal responses to carotid occlusion, R343

afferents, role in hypotension-induced attenuation of baroreflex sensitivity, R859

bradycardia from, effects of Met-enkephalin-Arg-Phe, H848

capsaicin-sensitive primary afferent fibers, role in regulation of jejunal alanine absorption, G695

cardiac innervation in lower vertebrates, physiological correlates, R1249

central activation by thyrotropin-releasing hormone analogue, effects on gastric NO, G895

effects on visceral afferent transmission through parabrachial nucleus, R786

#### Vagus nerve (continued)

medullary dorsal motor nucleus, and nucleus raphe obscurus role in pancreatic hormone secretion, E1128

repetitive stimulation, effects on heart rate and on cardiac vasoactive intestinal polypeptide, H1939

role in communication between immune system and brain, R1327

role in intestinal motility from GABA<sub>A</sub> receptor blockade in hypothalamic dorsomedial nucleus, G514

role in neural signaling of gastric water absorption, R236

#### Valine

incorporation into protein, rate measurement under 'flooding' conditions, E735

#### Valtin, Heinz

recipient of 1995 Robert W. Berliner Award for Excellence in Renal Physiology, F541

# Vanadate, Vanadyl derivatives, see Peroxyvanadium compounds

Vascular capacitance

reduced venous distensibility and venous volume in obesity and hypertension, R562

#### Vascular compliance

measurements in fish and effects of ACE inhibitor, H1814

#### Vascular disorders

and iron-derived reactive oxygen species, lung endothelial heme as iron source, L321

#### Vascular endothelial growth factor cytokine-binding proteins in lung (re-

view), L869

sites of expression in fetal and adult kidney, F240

# Vascular endothelial growth factor receptors

sites of expression in fetal and adult kidney, F240

# Vascular endothelium

see also Endothelial cells, vascular shear stress effects on hydraulic conductivity, H535

# Vascular leakage, see Permeability Vascular permeability factor

sites of expression in fetal and adult kidney, F240

#### Vascular reactivity

aortic, effects of exercise training and hypothyroidism, role of endothelium and smooth muscle cells, H1428

#### Vascular resistance

in coronary circulation, modulation, role of ATP-sensitive K channels and vasoactive neurotransmitters, H1077

effects of vasotocin, atrial natriuretic peptide, and epinephrine in eels, R1273

in forearm, in cirrhotics, response to methacholine, nitroprusside, and phenylephrine, G459

platelet-activating factor effects on, role of thromboxane  $A_2$ , H1954

in postnatal intestine, nitric oxide role in regulation, G949 pulmonary

and constitutive endothelial NO synthase gene expression regulation during lung development, L589

roles of cyclooxygenase inhibition and hyperoxia in regulating pulmonary perfusion, H1521

selective reduction by inhaled cGMP analogue, H2056

regulation by kidney, roles of endothelin

receptor subtypes, F455 renal, effects of long-term endothelin

infusions, R375 spontaneous oscillations in anesthetized dog. H7

#### Vascular smooth muscle, see Muscle, smooth, vascular

# Vascular system

muscle metabolism control by local vasomodulation (review), E797

#### Vascular tone

arteriolar

effects of protein tyrosine kinase and platelet-activating factor, H399

of skeletal muscle, role of bradykinin B<sub>2</sub> receptors and response to bradykinin, H1628

of coronary artery after ischemia/reperfusion, cholinergic and  $\alpha$ -adrenergic contributions, H886

effects on transmural coronary flow distribution in hypoperfusion, H1284 high-frequency ultrasound study of bra-

high-frequency ultrasound study of brachial artery flow-mediated vasoactivity, H1397

mechanism of spontaneous fluctuations, H7

potassium channels in arterial smooth muscle (review), C799

sustained aortic contraction in hypoxia, role of endothelium, H1015

sympathetic-stimulated, effects on arterial mechanics, H794

#### Vascular tone, pulmonary

and constitutive endothelial NO synthase gene expression regulation during lung development, L589 role of histamine receptors H<sub>1</sub> vs. H<sub>2</sub>,

H653

vasorelaxation, dysfunction in endotoxin-induced injury, L1029

#### Vascular waterfall

role of calcium channels in pressure-flow relations, H371

#### Vasoactive factors

renal hemodynamics and cyclooxygenase inhibition, F468

# Vasoactive intestinal peptide

effects on acetylcholine release from airway smooth muscle nerve endings, L432

effects on airway smooth muscle cell proliferation, L1047

effects on human lung fibroblast proliferation and chemotaxis, L278

effects on pancreatic goblet cell degranulation, G24

esophageal colocalization with nitric oxide synthase, G59

as neurotransmitter for distension-induced intestinal Cl<sup>-</sup> secretion

release with catecholamines in response to splanchnic nerve stimulation, R1449 smooth muscle relaxation from, mediating pathways, C171

#### Vasoactive intestinal peptide receptors

in regulation of pancreatic goblet cell degranulation, G24

type I, distribution in respiratory tract, L584

# Vasoactive intestinal peptidergic pathways

role in histamine H<sub>2</sub> receptor-induced colonic secretion, G465

## Vasoactive intestinal polypeptide dimaprit-evoked colonic release, G465 role in vagally induced tachycardia,

#### H1939 Vasoconstriction

 $\alpha$ -adrenergic, vs. metabolic dilation, of coronary arterioles, mediation by  $\alpha_1$ -adrenoceptor, H2487

angiotensin II-stimulated, mechanisms of potentiation by lithium, H2009 arterial, role of potassium channels (re-

arterial, role of potassium channels (review), C799

arteriolar, by  $\alpha$ -adrenoceptors, effects of acidosis and hypoxia, H2068

cerebral, from lysophosphatidic acid, H2048

of coronary vessels, sympathetic, modulation by ATP-sensitive K channels, H1077

effects of L-arginine analogues on coronary artery vasomotion, H1966

effects on aortic hemodynamics in perinatal period, H558

hepatic, from galactosamine and endotoxin, role of endothelin-1, G997

hypoxic pulmonary effects of leukotoxin on, L123 role of NADPH oxidase, L747

pulmonary

from endothelin-1, after endotoxin, modulation by endothelium, H2260 hypoxic and U-46619-induced, sites of inhaled NO-induced vasodilation, H1422

# renal

in afferent arterioles, role of calcium influx, F876

dietary protein level and effects of angiotensin II, F302

role of L-type calcium channels at renal resistance artery bifurcations, F251 serotonergic, in fish gill filaments, R1224

# Vasoconstrictors

α-adrenergic, phenylephrine, and effects of aging, on beagle hindlimb vessels, H92

effects on oxygen, lactate, and glycerol metabolism in marsupial skeletal muscle, R1217

site-specific, role in control of muscle metabolism (review), E797

#### Vasodilation

# see also Endothelium-dependent vasodilation; Vasorelaxation

adrenomedullin actions in conscious sheep, H2574

antidromic, and nociceptive C-fiber sensitization in zinc deficiency, R1423

arterial, role of potassium channels (review), C799 cerebral

hypoxia-induced, in newborn, effects of opioids and NO, H226

iloprost-induced pial dilation, indomethacin effects on, H1884

medulla- and cerebellum-evoked, coupling to electrocortigraphic bursts, R454

coronary, norepinephrine-induced, role of endothelium-derived relaxing factor, H1973

endothelium-dependent, impairment in Escherichia coli endotoxemia, role of endotoxin effects on EDRF and NO. H955

endothelium-dependent, in hepatic cirrhosis, G459

endotheliun-dependent and -independent, in Zucker diabetic rat, effects of low serum insulin, H2366

gastric, sensory neuron-induced, roles of NO and calcitonin gene-related peptide, G791

gestational, role of volume-sensitive cardiopulmonary receptors, R736

metabolic, vs.  $\alpha$ -adrenergic constriction, of coronary arterioles, mediation by  $\alpha_1$ -adrenoceptor, H2487

nitric oxide role during hypercapnic acidosis, H39

parasympathetic, effects of clonidine and yohimbine, R1196

of pial artery, β-adrenoceptor-induced, role of nitric oxide, cAMP, and cGMP, H1071

prostaglandin-induced, in newborn pial artery, role of NO and cyclic nucleotides, H1436

pulmonary

adenosine-induced, receptor subtype involved, H1862

adrenomedullin-induced, from whole molecule vs. fragments, H2211 effects of inhaled NO during hypoxic

and U-46619-induced vasoconstriction, H1422 as therapy in pulmonary hyperten-

as therapy in pulmonary hypertension, use of inhaled cGMP analogue, H2056

Vasodilators

17-β-estradiol-potentiated response of coronary artery, H377

altered reactivity in fetal pulmonary hypertension, H288

cGMP-dependent, effects on preglomerular vasculature, F338

and effects of aging on vasoreactivity, in beagle, H92

effects on aortic hemodynamics in perinatal period, H558

Vasomotor pathways

cuneiform nucleus activation of rostral ventrolateral medullary sympathoexcitation, R752

in fish gill branchial vasculature response to hypoxia, R771

Vasomotor response

conducted, and arteriolar gap junctional connexin proteins, H729

Vasopressin

and ACTH release, effects of cortisol on, E85

antihypertensive effect of withdrawal, role of sympathetic function, H1

effects on apical high-conductance K channels in collecting tubule, F569

effects on apical localization of aquaporin water channels in collecting ducts, C1546

effects on brain damage and mortality from hyponatremic encephalopathy, R1143

effects on electrogenic chloride secretion in inner medullary collecting duct cell line mIMCD-K2, F854

effects on endothelin-1 binding to ET<sub>B</sub> receptor in cortical collecting ducts, F385

effects on free and stored intracellular calcium, C503

effects on mesenteric vasculature, in male vs. female, normotensive vs. DOCA, rats, R40

effects on Na-K-Cl cotransport in cerebral vascular endothelial cells, C747

effects on oxygen, lactate, and glycerol metabolism in marsupial skeletal muscle, R1217

effects on  $pH_i$  in vascular smooth muscle, C580

endothelin-3-induced secretion, role of cation channels, E467

in fetal hypothalamus, effects of stress and glucocorticoids, E1096

fetal levels after hypoxemia from reduced uterine blood flow vs. maternal  $N_2$  inhalation, F868

hemodynamic responses, during  $V_1$  receptor blockade in baroreflex deficiency, R156

inhibition by gastric water infusion, neural signaling mechanism, R236

intrahypothalamic release, functional consequences and controversies (review), E537

plasma levels

after hypertonic saline, mannitol, or both, effects on water intake in rat, R651

in fetus, after carotid occlusion, and immaturity of vagal afferent buffering systems, R343

in osmo- and thermoregulation in dehydrated humans, R414

response to hemorrhage, role of brain angiotensin II, R1500

response to hypovolemia in rat, role of medullary A1 noradrenergic cell group, R1336

response to loading and unloading of right heart baroreceptors, R1069

response to sustained hypovolemia, role of adaptive resetting of volume control mechanism, R349

response to water immersion, head-out, R583

response to water immersion in rhesus monkey, effects of cardiac denervation, R1040

role in cardiovascular response to hemorrhage, effects of hypertension on, H2302

role in hypotension-induced attenuation of baroreflex sensitivity, R859

role in ion conductances in luminal and basolateral cortical collecting duct, F20

secretion by brushtail possum marsupial, effects of stressors on, R1319 sexually dimorphic antidiuretic action, role of estrogen in, R951

in supraoptic nucleus, osmotic stimulation, role of synaptic connection with anterior hypothalamus, R1034

and vesicle fusion proteins in inner medullary collecting duct and bladder, C792

water conductivity from, in cortical collecting duct, effect of prostaglandins, F1456

Vasopressin receptors

calcium-mobilizing, in renal medulla, F1198

VI

effects on sodium and water excretion, R796

hemodynamic effects of blockade in baroreflex deficiency, R156

 $V_{1a}$ , effects of antagonist SR-49059 on human vascular smooth muscle cells, H404

Vasoreactivity

coupling to [Ca<sup>2+</sup>]<sub>i</sub>, age-related changes, R1394

Vasorelaxation

endothelium-dependent acetylcholineinduced, effects of pulse pressure on, H359

left ventricular

determinants of speed, H170 load-dependent, effect of asynchrony and ryanodine, H17

umbilical artery, impaired cyclic nucleotide-dependent, H202

Vasotocin

cardiovascular effects in eels, R1273 effects on distal nephron whole cell currents, F64

effects on short-circuit currents in renal epithelial cells, C762

Veins

see also specific vein

compliance, reduced venous distensibility and venous volume in obesity and hypertension, R562

endothelin receptors in, subtypes and effects of blood flow and oxygen tension, H345

function, measurements in fish and effects of ACE inhibitor, H1814

Vena cava occlusion

hypotension from, effects on sympathetic efferents and baroreflex responsiveness, R859

vasopressin response in rat, role of medullary A1 noradrenergic cell group, R1336

Venous volume

reductions in obesity and hypertension, R562

Ventilation

see also Respiration

central respiratory drive effects on barosensitivity of rostral ventrolateral medulla, R909 in dystrophic hamster, thyroxine effects

on, R779

Ventricles see Heart ventricles Venules

coronary, neutrophil-endothelial interactions, H490

endothelial cells, oxidative stess effects on glutathione and on HSP 70 mRNA and protein, H1651

#### Venules (continued)

leukocyte rolling in, subtypes involved, in vivo differentiation, H909

mesenteric, leukocyte-endothelial cell adhesion, induction by oxidized chylomicrons, mechanisms, H2175

oxygen tension, vs. arteriolar, and oxygen delivery to tissues, H802

postcapillary

nitric oxide synthase inhibition by endogenous NG, NG'-dimethyl-L-arginine, inflammatory effects, H2224

oxidized LDL-induced leukocyte-endothelial cell interactions, NO effects on. H1643

#### Veratridine

effects on pancreatic amylase secretion and c-fos expression, G339

#### Vertebrates

lower, cardiac vagal innervation, physiological correlates, R1249

#### Vesicle fusion proteins

presence in inner medullary collecting duct and bladder, C792

#### Vesicular transport

caveolae-mediated, inhibition by Nethylmaleimide, H48

of glucose, in enterocyte brush-border membrane vesicles, polyamine effects on, G416

of glutamate, in heart sarcolemmal vesicles, H194

sodium-taurocholate cotransport, in hepatocyte, effects of prolactin, G11

#### Vestibular nerve

cardiovascular and respiratory functions, required brain stem projections, R1381

## Vestibular system

mechanotransduction in hair cells: stereociliary bundle structure and function (review), C1

# Vinculin

effects of acetylcholine-induced tracheal smooth muscle contraction on, C563

#### Viral infection

effects on bronchial epithelial cell migration and matrix attachment, L214

#### Viruses

adenovirus, as vector for gene transfer to bronchial submucosal glands for cystic fibrosis therapy, L657 to fetal lung cells, L839

influenza virus, acute phase response to, behavioral changes and cytokine levels, R78

parainfluenza type I (Sendai), lung infection from, cytoplasmic motility in alveolar macrophages, role of NO, L399

abdominal, cardiovascular reflexes from, effects of tachykinin-receptor antagonists on, H526

sex differences in blood flow distribution, R66

## Visceral afferents

through parabrachial nucleus, neuropeptide and neurotransmitter interactions, R786

#### Visceral sensory information

integration in dorsal motor nucleus of vagus, G780

#### Viscoelasticity

of cross bridges in ventricular trabeculae, H987

role in baroreceptor resetting in hypotension, H1773

#### Vitamin A

intestinal trafficking, roles of cytoplasmic retinol binding proteins, G224

#### Vitamin C

#### see Ascorbate; Ascorbic acid Vitamin D, 1,25(OH)<sub>2</sub>D<sub>3</sub>

circulating levels in osteopetrotic rat, E312

deficiency in uremia, and kinetics of extrarenal 1α-hydrolase, F746

effects on cardiomyocyte expression and secretion of atrial natriuretic peptide, E1108

therapeutic use in X-linked hypophosphatemia, F357

# Vitamin E

in plasma, effects of smoking on, H679 Volatile anesthetics

airway smooth muscle relaxation from, mechanisms, L166, L187

# Volume control, see Cell volume regulation; Osmoregulation

Volume expansion

extracellular, natriuresis from, roles of prostaglandins and NO, R1442

reflex responses to, in newborn and agerelated changes, H1343 with isotonic saline, natriuresis from,

#### role of oxytocin, R634 Volume regulatory decrease, see Regulatory volume decrease

#### Volume status

relation to plasma proteins and capillary hydraulic conductivity in frogs, seasonal variations, R468

# Wakefulness, see Sleep

Walter B. Cannon lecture, F981, F983

gastrointestinal absorption, afferent signaling pathways, R236

in intestine, role in blood volume and plasma protein restoration after hemorrhage, R715

total body content, effects on energy requirement calculations, E153

transport in cortical collecting ducts, effects of luminal prostaglandin E2,

#### Water and solute efflux

from nonpigmented ciliary epithelial cells, mechanisms, C721

#### Water balance

### see also Salt and water balance; Fluids, urinary excretion

effects of long-term N<sup>G</sup>-nitro-L-arginine methyl ester infusion, R317

#### Water channel proteins

presence in cysts from autosomal dominant polycystic kidney, F398

## Water channels

aquaporin-1 localization in nephron and renal vascular structures, F1023 vasopressin effects on apical localization

in collecting ducts, C1546 vs. water transporters (review), C1077

### Water deprivation

see also Thirst

effects on colonic motility in fowl, R690 renal organic osmolyte response to, in humans, F227

#### Water intake

see also Thirst

effects of human satietin in rats, R1 from angiotensin II, responsible receptor subtype in organum cavum prelamina terminalis, R1401 in ethanol-habituated sheep, R1526 reflex effects on osmoregulatory modulation of sweating in humans, R414 regulatory role of plasma osmolality vs.

#### Water load

renal organic osmolyte response to, in humans, F227

sodium levels in rat, R651

#### Water permeability

inner medullary collecting duct adaptation to dehydration, F53

#### Water transport

across membranes, role of hydrostatic pressure (August Krogh lecture),

with solutes, seasonal variations in capillary hydraulic conductivity and volume status in frogs, R468

#### Weight cycling

effects on linoleate and α-linolenate tissue stores, R498

#### Women, see Gender differences **Wound healing**

cation channels from, in corneal endo-

thelium, C1179 hypoxia-stimulated capillary network formation in lung microvessel endothelial cells, L789

Writing to learn physiology (editorial), S1, S81

#### Xanthine dehydrogenase/xanthine oxidase

in endothelial cells, effects of nitric oxide and cell redox status, L809

# **Xanthine** oxidase

and effects of hepatic hypoxia on E. coliinduced TNF-α expression, G311

and hypoxanthine, effects on portal pressure and hepatic bromosulfophthalein uptake, G47

role in pulmonary permeability from hepatic ischemia-reperfusion, G988

# Xanthine-xanthine oxidase

effects on tracheal epithelial cell membrane conductance and permeability, L284 **Xiphisternum** 

perichondrial localization of endothelin ET-1/ET<sub>A</sub> receptor system, C496

# X-linked hypophosphatemia

effects of low-phosphate diet on renal Na+-P; cotransporter, F1062 murine Hyp homologue, osteoblast phe-

notype abnormalities (review), F357

#### Yohimbine

effects on sympathetic salivation and on parasympathetic salivation and vasodilation, R1196

Zero gravity

effects on contractile protein fast and slow isoform mRNAs, C466

Zinc

see also Copper- and zinc-containing superoxide dismutase

dietary deficiency, sensitization of nociceptive C-fibers, R1423 plasma levels, postprandial decrease, role of interleukin-1, E255

Zona glomerulosa cells, see Adrenal gland, glomerulosa cells

Zucker rat

codominant effects of fatty (fa) gene in early development, E15

Zymogens

activation in pancreatitis, role of ATP and glutathione decrease, G592

Zymosan

hormonal and metabolic changes from, role of tumor necrosis factor, E219

Zymosan-activated serum

induction of NO oxidation products in fetal type II cells, L501

# Author Index to Volume 268

A

Aalto, K., L71 Aarhus, L. L., F657 Aaronson, P. I., H301 Abbinante-Nissen, J. M., L601 Abboud, F. M., R487 Abdallah, L. E., G695 Abe, K., F410, F1148 Abe, M. K., L894 Abel, F. L., H1593 Abela, A. P., L47 Abiko, Y., H614 Abman, S. H., H288 Abraham, M., H250 Abramow, M., C557, F53 Abran, D., H628 Abreu, L., G459 Absher, M., C910 Absood, A., L1047 Acampora, R., E1167 Acarregui, M. J., L818 Ackermann, M., F39 Adachi, S., H162 Adair, T. H., H1373 Adam, L. P., C563, C903 Adams, D., H178 Adams, H. R., H955 Adamson, S. L., H558 Adaniya, H., H2321 Adcock, I. M., C331 Addink, A., R1178 Adebanjo, O. A., F447 Adelson, J. W., G251 Adler, G., G328 Adnot, S., H828 Adorante, J. S., C89, C721 Agnoletti, G., H391 Agrafojo, J., L1029 Agrawal, A. K., E439 Agre, P., F1023 Aguirre, J., F1087 Ahmad, A., C1164 Ahmad, F., E932 Ahmed, A., F746 Ahn, D.-K., R1500 Ahn, K. Y., F99 Ahnen, D. J., E1205 Aiello, E. A., H926 Ajami, A. M., E360 Ajima, M., E558 Ajmal, M., R492, R1026 Akagi, Y., F1102 Akamatsu, K., G997 Akana, S. F., R1209 Akbarali, H. I., C877, G979 Akimitsu, T., H2063 Akiyama, T., E531 Akiyoshi, M., E185 Akpele, L., E668 Aktories, K., L753 Al-Badawi, H., H749 Albelda, S. M., L657 Alberola, A., R375 Albertini, A., H391 Albillos, A., G459 Albina, J. E., C669 Albuquerque, M. L. C., H591 Alexander, J., Jr., H1803 Alford, F. P., E410 Alger, L. E., L957 Alioua, A., L1057 Aljadeff, G., R324 Allaart, C. P., H945, H2162

Allan, C. J., H2009 Allard, J., H48 Allegrini, P. R., H1490 Allen, L., L181 Allen, R., L856 Allen, S. J., H178 Allison, J. A., H584 Ally, A., H1577 Alm, P., G59 Alonso, C., H25 Alper, S. L., C201, C894 Alpers, D. H., C1401, E1205, G33 Alpert, N. R., C252 Altavilla, D., H1412 Alton, E. W. F. W., C297 Alvarez, D., E572 Alvaro-Alonso, I., E343 Alverdy, J., G374 Alves, C., H351 Alzaid, A., E595 Amaha, K., H2017 Ambrosio, G., H2352 Amiel, C., L390 Amini, S. B., E153 Amsterdam, E. A., H448 Andersen, J. L., R1069 Andersen, L. J., R1069 Andersen, T. T., C958 Anderson, B., S32 Anderson, B. O., G471 Anderson, D. C., H2175 Anderson, F. L., H2195 Anderson, G. G., R266 Anderson, J., E92 Anderson, J. G., H155 Anderson, J. M., C1186, F514 Anderson, M. E., F375 Anderson, W. G., R1359 Andersson, K.-E., G59 Anderstam, B., R520 Ando, Y., F490, F808, F1093 André, A., H1223 Andres, D. W., L27 Andriantsitohaina, R., H1223 Åneman, A., G641, R924 Angelopoulos, T. J., E229 Anger, M., H1947 Anguita, J., C572 Antoniello, S., E248 Antoniu, B., C1381 Anvari, M., G868 Anversa, P., H1702 Aoki, T., L846 Aoki, Y., F279 Aou, S., R21 Arai, M., F1102, H2084 Araki, J., H1061 Arant, B. S., Jr., F266 Arar, M., F309 Arbeeny, C. M., E678 Arciero, P. J., E1192 Argent, B. E., C823 Ariano, M. A., F1185 Arieff, A. I., R1143 Arilla, E., E343 Arisz, L., F543 Ariyoshi, H., C856 Armando, I., F1087 Armour, J. A., R403 Armsby, C. C., C894 Armstead, W. M., H226, H1071, H1436 Arndorfer, R., G1037

Arnolda, L., R909 Arnsdorf, M. F., C968 Aronson, P. S., F204, F815 Arruda, J. A. L., F461 Arthur, S. R., H836 Artman, J. R., H535 Artman, M., H1714 Aryana, A., L101, L935 Asano, Y., F490, F808, F1093 Ashen, M. D., H506 Ashikaga, T., C1104 Ashkar, Z. M., F1218 Ashraf, M., C838 Ask, P., H476 Askari, A., H1115, H1115 Assael, B. M., F793 Atiyeh, B. A., F266 Atkinson, J., R1394 Atkinson, R. L., E546 Ator, R., H2125 Atreyee, B., G242 Atucha, N. M., E897 Atwater, I., E336 Atweh, S. F., G695 Aucoin, M. M., H1651 Auletta, M., E248 Aurang, K., G102 Ausiello, D. A., C1552 Ausma, J., H1265 Aviles, D. H., F279 Avioli, L., F357 Aviv, A., C958 Avkiran, M., H1714 Avraam, P., H1096 Aw, T. Y., G116, H2175 Awayda, M. S., C1450 Axel, L., H1304 Ayame, H., E391 Ayus, J. C., R1143 Ayuse, T., H1106 Azevedo, J. L., E453 Azhari, H., H1918

B

Ba, Z. F., G749, H1390 Başkurt, O. K., H260 Babyatsky, M. W., G1025 Bacarra, A. E., C472 Bache, R. J., H1891 Bachhuber, B. G., C1141 Bachinsky, D. R., F398, F435 Bachmann, S., F885, F1164 Bacon, B. R., G451 Bado, A., G389 Baertschi, A. J., H1405, R236 Bagaev, V., G355 Bagby, G. J., E219 Baghdoyan, H. A., L941 Bahinski, A., C191 Baillie, A. G. S., R492 Bains, J. S., H1343, R625 Baird, A. J., H242 Baird, S., E168 Baker, A. J., C55 Baker, E. J., H1165 Baker, J. E., H1165 Baker, R. R., C1148 Bakker, P. J. M., E813 Balaban, R. S., H82 Baldelli, P., C732 Baldi, S., E1 Baldwin, A. L., H316

Baldwin, J. C., E48 Baldwin, K. M., R33 Balestrieri, P., H2352 Bali, J.-P., G522 Balkan, B., R475 Ball, A. K., C1492 Ball, H. A., H1490 Ball, S. S., E941 Balla, G., L321 Balla, J., L321 Balla, T., E135 Ballard, P. L., L674, L839 Ballard, S. T., L526 Ballet, F., E298 Balligand, J.-L., H1293 Balm, P. H. M., R1163 Balon, T. W., E987 Baluk, P., L263 Bamford, O.S., L801 Bandini, L. G., F613 Banerjee, A., G397, G471, L1029 Banks, S. M., H692, H1634 Baquiran, G., E60 Bara, J., G431 Baracos, V. E., E996 Barada, K. A., G695 Barbee, K. A., H1765 Barbero, E. R., G1051 Barclay, J. K., H1343, R759 Barenholz, Y., H759 Barhoumi, R., H1651 Baribeau, J., L607 Barker, P. M., L270 Barlet-Bas, C., F1141 Barlovatz-Meimon, G., C1062 Barman, S. M., R1472 Barnes, P. J., C331, L41, L278 Barnes, R. J., R1101 Barnett, R. L., C376 Barnett, T. G., G650 Baron, A. D., E925 Baron, C. B., C458 Barontini, M., F1087 Barr, S. C., H1258 Barrabés, J. A., H233 Barrett, E. J., E55, E820 Barrett, P. Q., C985 Barrios, C., G459 Barron, B. A., H848 Barron, J. T., H713 Barros, E. J. G., F1211 Barry, W. H., H1757 Bartke, A., E745 Bartness, T. J., H1343, R744 Barton, D., G183 Basavappa, S., G90 Basilisco, G., G95 Bason, L. M., F227 Bassani, J. W. M., C1313 Bassani, R. A., H703 Bastin, J., F634 Bates, P. J., L33 Bathgate, R. A. D., R1319 Batra, V., H653 Battaglia, F. C., E705 Battarbee, H. D., G410 Baudouin-Legros, M., F496 Baukal, A. J., E135 Baum, B. J., G1074, R1491 Baum, M., F309, F815, F847 Bauman, W. A., H117, H2239

Baumgart, D., H886

Bavaria, J. E., L657

Bayguinov, O., C619 Bazin, R., E1039 Beauchamp, R. D., E1199 Beaufils, H., F793 Beaulieu, J.-F., G857 Beaumont, J., H1181 Beauwens, R., C111 Becich, M. J., C1401, G33 Becker, E., L747 Becker, W., G732 Beckers-Bleukx, G., C513 Beckmann, J. D., L230 Beers, K. W., C741 Begin-Heick, N., R98 Beierwaltes, W. H., G780 Beil-Moeller, H., G183 Belke, D., R1507 Belkin, V., R1101 Bell, C. J., G134, G622 Bell, D. R., H377 Bellinger, L. L., R1 Bell-Quilley, C. P., F561 Belmin, J., H2288 Belott, T. P., F876 Bendayan, M., F913 Benedek, C., E1083 Ben-Kohav, N., R1101 Bennett, G. L., G380 Beno, D. W. A., C604 Benos, D. J., C1148, C1440, C1450 Benowitz, N. L., E1192 Benson, B., L374 Benthem, L., R299 Bentley, M. D., F404 Bentz, C., C944 Benveniste, E. N., C127, C1440 Berclaz, P.-Y., E1083 Berdiev, B. K., C1450 Berenson, M. M., G754 Berg, B. R., H1215 Berg, G., H1122 Berg, L., H1343, R808 Bergasa, N. V., G346 Berger, R., C1474 Bergh, C. M., H202 Bergman, R. N., E397 Bergquist, K. E., E678 Bergsten, P., E282 Bergström, J., R520 Berkenbosch, F., R989 Berkich, D. A., E693 Berlin, J. R., C271 Berman, A., R66 Bernard, C., H2288 Berndt, T. J., H1343, R731 Berry, C. A., F723 Berry, L. C., Jr., L239 Bers, D. M., C271, C651, C1313, H703 Berson, A., G107 Berthiaume, Y., L983 Bertolino, F., R366 Bertrand, C., L263

H703
Berson, A., G107
Berthiaume, Y., L983
Bertolino, F., R366
Bertrand, C., L263
Besedovsky, H. O., R902
Bessac, A.-M., R366
Besselmann, M., H1462
Betz, A. L., H646
Bevan, A. P., E60
Beyar, R., H633
Beyer, E. C., C356, H729
Beylot, M., E880
Bhandaru, S., H1471
Biagini, D., H1829
Bialecki, R. A., L152

Bianchi, G., H1702 Biber, J., F309, F626, F784, F1017, F1062 Bichara, M., F1224 Bidgoli, M. M., H2569 Biemesderfer, D., F815 Bienkowski, M. J., C1173, F1132 Bier, D. M., E268 Bijvelt, J. J. M., H773 Bilder, G. E., C1301 Bilezikian, J. P., C1104 Billiar, T. R., G177 Billington, C. J., R248 Biolo, G., E75, E514 Birge, B., S66 Birnbaumer, L., C732 Birnby, L. M., L789 Bischof, G., C154 Bischoff, A., R192 Bischoff, R., H1352 Bistrian, B. R., E255, G568 Blaber, A. P., H1682, H1688 Blache, D., H679 Blackshaw, L. A., G1004 Blair-West, J. R., R1526 Blanche, P., H1982 Blangé, T., H987 Blank, R. S., C1259 Blank, U., H1343, R605 Blantz, R. C., F1004 Blatt, C., G374 Blatter, L. A., C503 Blau, H., L144 Blaustein, M. P., C259 Blennerhassett, M. G., G673 Bloch, D. B., L589 Bloch, K. D., H1343, L589, R816 Bloch-Faure, M., F1053 Block, J. H., F1132 Block, M., R1224 Blonde-Cynober, F., E298 Bloom, S., F754 Blount, L., E28 Blumberg, J. B., R208 Bluthé, R.-M., R1327 Boddell, P., R33 Bodine-Fowler, S., C527 Bodman, M. E., L12 Boehm, E. A., C628 Boelsterli, U. A., G797 Boer, P., F1229 Boer, W. H., F1229 Boerboom, L. E., H1165 Boggaram, V., L481 Bohinski, R. J., L381 Bohlen, H. G., H2366 Bohn, E. E., E902 Bohr, D., H1122 Boim, M., F525 Boim, M. A., F1132 Boitnott, J. K., H1106 Bol, A., H1265 Bomsztyk, K., F273 Bond, M., H1875 Bonen, A., R884 Bonham, A. C., H526 Bonner, J. C., L869 Booth, F. W., C918, E277 Boozer, C. N., E546 Borbély, A. A., R1365 Bordin, S., E336 Borensztein, P., F1224 Borgers, M., H1265 Borgese, F., C434

Borkoski, J. P., R1513

Borm, G. F., E551 Boron, W. F., F179, F193 Boroujerdi, M. A., E766 Boschero, A. C., E336 Bosco, D., C611 Bose, R., C138 Bosse, H. M., F885 Boswell, T., R1418 Botkin, S. J., F1185 Boucher, R. C., C425, C708, L270, L1021 Bouclin, R., C1528 Bougnères, P.-F., E652 Bouloumie, A., E1135 Bourdeau, J. E., F1038 Bouriquet, N., F338 Bouscarel, B., G300, G908 Bovetto, S., R14 Bowers, B. A., C1395 Boyd, S. G., E1154 Boydstun, I., F651 Boyer, J. L., G18 Brace, R. A., F868 Bradbury, M. J., R183 Bradford, A. L., C1148 Bradley, K., R358 Bradley, E., Jr., G988 Brady, H. R., F1 Brand, S. J., G1025 Brandes, R., C55 Brandsch, M., F391 Brandt, J. D., C1067 Brandt, R. R., F455, H921 Braquet, P., G889 Brasseur, J. G., G320 Braun, E. J., H1343, R690 Bravo, E., F746 Bravo, P., G685 Brazy, P. C., F375 Brenna, J. T., E1018 Brenner, B. M., F1132 Breton, S., F595 Brett, J., C1104 Breuer, W., C1354 Breuiller-Fouché, M., E825 Breyer, M. D., F931 Bridenbaugh, S., E949 Brienza, N., H1106 Briggs, J. P., F948, F953, F1164 Brillon, D. J., E501 Briscoe, P., L374 Britton, R. S., G451 Brockway, P. D., G416 Brody, A. R., L869 Brogden, A. P., F13 Bronk, S. F., G613 Brooks, D. P., R951 Brooks, L. A., H1667 Brooks, V. L., R1343 Brophy, C. M., H202 Brorson, J. R., C829 Brouhard, B. H., F302 Brown, C. L., L438 Brown, C. R., C331 Brown, D., F398, F435, G663 Brown, J. C., E645 Brown, J. J., L818 Brown, P. D., C647 Brown, T. R., C1474 Brozovich, F. V., C237, C1202 Bruch, R. C., R874 Brückner, H., L753 Brugnara, C., C894 Brummermann, M., H1343, R690

Brunengraber, H., E446, E660, E880 Brunet, J., E446, E660 Brunner, H. R., H2267 Brunner, M., S2 Bruno, M. A., L381 Brutsaert, D. L., H2036 Bryant, B. P., R58 Bryant, K., H2125 Bryson, J. M., E752 Bryson, S. E., R963 Bubien, J. K., C1440 Bublys, V., L438 Buch, S., L78, L455 Buckley, S., L625 Buclin, T., E1051 Budinger, G. R. S., L918 Buffington, C. W., H1276, H1284 Buffin-Meyer, B., C1277, F1141 Bui, K. C., L625 Bukowski, D. M., L21 Bullard, S., L666 Bulloch, K., E168 Bulus, N., G917 Bunting, B., F854 Burakoff, R., G270 Burbach, J. A., H1343, R779 Burckhardt, G., G663 Burczynski, F. J., H1659 Burdick, M. D., L856 Burg, M. B., C402, F983 Burgess, J. W., E60 Burggren, W. W., H56 Burghardt, R. C., H1651 Burgstahler, A. D., C1186 Burke, E. J., H178 Burke-Wolin, T., L546 Burkhoff, D., H2056 Burnatowska-Hledin, M. A., F1198 Burnett, J. C., Jr., F455, F657, H921 Burns, K. D., C925 Burtin, M., F793 Bushel, P., F760 Bushinsky, D. A., C80 Butcher, K. S., R214 Butler, D. G., R1273 Butters, C. A., H419 Buurman, W. A., H1847 Byrne, M. M., E21

Cabane, S., G522 Cabantchik, I. Z., C1354 Cabero, J. L., G82 Cacho, G., G459 Caffrey, J. L., H848 Cai, J. J., H2024 Cai, Z.-S., G189, H1659 Cain, B. D., F363 Cala, P. M., C721 Calam, J., F754 Calaresu, F. R., R1464 Calcutt, N. A., H740 Caldwell, M. D., H155 Callaghan, J. M., F363 Callaham, E. M., C1295 Calles-Escandon, J., E1192 Cameron, J. D., H411 Campbell, J. A., E268 Campbell, K. B., H170

Campbell, R. G., E501

#### **AUTHOR INDEX TO VOLUME 268**

Campbell, W. G., F363 Campbell, W. W., E1143 Campling, B. G., H1869 Campo, G. M., H1412 Canada, A. T., L539 Canale, P., H1412 Caniggia, I., L136, L374, L501 Cannon, J. G., R208 Cano, A., C101 Cano, C., H1037 Cantiello, H. F., C1552 Cantley, L. G., F1211 Cantral, D. E., L723 Canty, J. M., Jr., H788 Cao, L., E1108 Capaldo, B., E248 Capasso, G., F234 Capasso, J. M., H2345 Capdevila, J. H., F931 Capdeville-Atkinson, C., R1394 Caplan, M. J., F285 Caplen, N. J., C297 Cappuccio, F. P., F718 Caputi, A. P., H1412 Carey, J. O., E453 Carey, R. M., F1185 Carl, A., C619 Carl, V. S., G397 Carlson, S., C472 Carneiro, E. M., E336 Carney, B. I., G925 Caron, N., F468 Carone, F. A., F398 Carpenter, T., F651 Carpenter, W. H., E917 Carr, L. J., H935 Carr, P., C580 Carranza, M.-L., C1277 Carrasquillo, J. A., R1491 Carreras, M. J., H233 Carrière, S., R105 Carroll, J. L., L801, R324 Carson, J. A., C918 Carson, J. L., L576 Carteaux, J.-P., H432 Cartee, G. D., E902 Carter, J. E., L381 Carter, L., G404 Casado, F. J., E368 Casale, T. B., L117 Casellas, D., F338 Casey, D. M., G361 Cason, B. A., H879 Cassingena, R., L390 Castellano, A., F525 Castiglioni, P., H1606 Castillo, L., E360 Castro, L. J., H2553 Catalano, P. M., E153 Catelloni, F., E965 Caterson, I. D., E752 Catt, K. J., E135 Cattini, P. A., H1927 Catto-Smith, A. G., G121 Cavaillé, F., E825 Cayabyab, F. S., G831 Cayeux, M.-C., E630 Cechetto, D. F., H1343, R214, R786 Cecioni, I., H1829 Ceriello, A., E1167 Cernacek, P., F416 Cerutti, C., R382 Ceryak, S., G908 Cevese, A., H7

Chai, C. Y., H1499 Chakder, S., G443 Chalfant, M. L., C572 Challis, J. R. G., E1096 Chalmers, J., R909 Chambers, S. T., F227 Chambers, T. J., E318 Chamow, S. M., G380 Champigneulle, A., F1070 Chan, B., L85 Chan, J. S. D., R105 Chan, J. Y. H., R1242 Chan, K. H., H2329 Chan, S. H. H., H2329, R1242 Chandel, N., L918 Chander, A., L108 Chandler, L. J., C700 Chandra, S., C1133 Chang, F.-Y., G171 Chang, J.-K., H2211 Chang, R. S. L., H1343, R820 Chang, S.-W., L123 Chang, Y. S., H535 Channon, S. M., E121 Chao, T.-S. O., L894 Chao, V. A., H1613 Chapman, S. H., C952 Chapman, T. E., E360, E668 Charbonneau, E., C1528 Charles, A. C., C1537 Charles, C. J., R201 Charon, C., E1039 Chase, P. B., C480 Chastre, E., G431 Chaudhuri, G., R569 Chaudry, I. H., G749, H1390 Chauvin, C., E965 Cheinberg, B. V., H1202 Chemla, D., H1947 Chemtob, S., H628 Chen, C., E204 Chen, C.-Y., H662 Chen, F., C1126, H1723 Chen, G., C1104 Chen, J.-G., C1512 Chen, L. C., L558 Chen, L. K., F179, F193 Chen, M., R997 Chen, R. Y. Z., G791 Chen, S.-J., L95 Chen, T.-S., G171 Chen, W.-L., E33 Chen, X.-L., H74 Chen, Y.-F., L95, L328 Chen, Z.-Y., R498 Cheng, S. H., L615 Cheng, S.-L., F357 Cheng, W., H1702 Chepilko, S., C389 Cherian, M., H250 Chernova, M. N., C201 Cherrington, A. D., E194, E521 Chesley, A., E127 Cheval, L., F1141 Chevalier, R. L., F1117 Chey, W. D., G539 Chiao, J. J. C., H2167 Chiariello, M., H2352 Chik, C. L., E458 Child, M. J., H836 Chilian, W. M., H490, H2487 Chini, E. N., C741 Chioléro, R., E630

Chiravuri, M., G95

Chitravanshi, V. C., R851 Chiu, E. K. Y., H1 Chiyotani, A., C1342 Cho, K. W., R1129 Chobanian, M. C., F375 Chong, S. S., F1038 Chopra, I. J., E572 Choquet, A., G431 Choshniak, I., R1101 Chow, J. W. M., E318 Christensen, E. I., F1023 Christman, B. W., L239 Christopher, M. J., E410 Chu, C.-S., L565 Chujo, M., H1077 Chulak, M., G1025 Chumley, P., L501 Chung, K. F., L278 Chung, K. H., F1117 Churg, A., L17, L832 Ciociaro, D., E1 Civan, M. M., C572 Claassen, L., L230 Claeys, D., C1207 Clark, J. F., C628 Clark, L. C., H2345 Clark, M. G., E305, E797, R1217 Clark, T. P., E85 Clarke, I. J., E204 Clarkson, C. W., H1335 Classen, M., G496 Clausen, T., E849 Clauser, E., F922 Clauser, E., F922 Clauss, W., H1343, R605 Clavell, A. L., F455 Claycomb, W. C., H1471 Claycombe, K. J., H265 Clayton, C., H2104 Cleary, J. P., R248 Clemens, T. L., C1090 Clerici, C., L390 Closset, J., H817 Cloutier, M. M., L851 Clozel, J.-P., H432 Clozel, M., H432, H828 Cobb, J. P., H1634 Coburn, R. F., C458 Coca-Prados, M., C572 Cock, M. L., F868 Coetzee, W. A., H1714 Cogan, M. G., F723 Coggan, A. R., E375 Cohen, C. J., C985 Cohen, D. M., E397 Cohen, M., F829 Cohen, R. A., H2274 Cohen, R. J., H2232 Colás, B., E343 Colasurdo, G. N., L432, L1006 Colclasure, G. C., C660 Cole, W. C., H926 Colella, A., H1829 Coleman, M. E., C918 Coleman, M. J., R1295 Colflesh, D., F251 Colgan, S. P., C472 Collier, A. M., L576 Collins, J. F., G917 Collins, S. M., G673 Colman, R. W., H1352 Colon, E., E255 Colquhoun, E. Q., E305, E797, R1217 Combe, C., R1327 Comini, L., H391

Condorelli, G., E987 Conget, I., E580 Conlon, J. M., R1359 Conn, C. A., R78 Connell, P. M., H419 Connolly, C. C., E194 Conrad, K. P., R1117 Cook, A. K., F876 Cook, D. I., G806 Cook, I. J., G389 Cook, J. L., H1471 Cook, S. M., H2569 Cooke, C. R., R156 Cooke, H. J., G465 Cooney, G. J., E752 Cooper, M. E., F588 Cooper G., IV, H2495 Copeland, J. R., H458 Coppack, S. W., E588 Corboz, M. R., L526 Corleto, V. D., G739 Corman, B., H2288, R536, R1394 Corr, P. B., H1740, H2405 Correa, R., H1634 Corretti, M. C., H1397 Corvol, P., F922 Costoli, A., H1829 Coulton, G. R., C513 Courneya, C. A., H2302 Court, L., R253 Courtice, G. P., R1249 Couser, W. G., F273 Couture, P., H1343, R641 Covell, J. W., H1788 Cowley, A. W., Jr., H1343, R317, R796 Cox, H. S., R278 Cox, J. E., R150 Cox, J. V., F503 Cox, K. H., F503 Cox, R. H., H2522 Cox, T. C., C1284 Cox, V. M., E288 Coy, D. H., G102, G739 Craft, N., H1441 Cragoe, E. J., Jr., C1227, E476 Crevel, H., L966 Crews, F. T., C700 Crim, C., L129 Crim, M. C., E1143 Croatt, A. J., C227 Crofton, J. T., R951 Crönlein, J., R1310 Crosby, S. R., E623 Crouch, E. C., L309, L491 Croxton, T. L., L187, L201, L207, L642 Crumb, W. J., Jr., H1335 Cruz, N. F., R445 Cryer, P. E., E433 Crystal, G. J., H39 Crystal, R. G., L565 Cudd, T. A., E845 Cui, D.-M., G872 Cullen, J. J., G95, G959 Cunha, M. J., F1211 Cunnane, S. C., R498 Cunnion, R. E., H692 Cuppoletti, J., C191 Curran, K. A., F363 Curry, F. E., H1982 Curry, F.-R. E., C1067 Curthoys, N. P., C449

Curzen, N. P., H2260, L509 Cutler, R. G., E941 Cynober, L., E298 Czachurski, J., R958 Czerwinski, S. M., E730 Czosnyka, M., H213

#### I

Dagan, D., F323 Dahl, R., F829 Dailey, L., L902 Dalinghaus, M., H974 Dallman, M. F., R142, R183, R1209 D'Almeida, M. S., H1368 Damassa, D. A., R1303 Dampney, R. A. L., R1295 Danel, C., L565 Dang, T., R549 D'Angio, C. T., L826 Daniel, E. E., G161, G831, H138, L47, L407 Danner, D. J., C1395 Danner, R. L., H692, H1634 Dantzer, R., R1327 Dantzler, W. H., F1109, R1539 D'Anza, J., L438 Darlington, D. N., E1065, H1343, R715 Darmaun, D., E1123 Dart, A. M., H411 Dartt, D. A., C713 Darvish, N., F323 Daughters, G. T., II, H2553 David, F., E446, E660 Davidenko, J., H1181 Davies, P., L862 Davies, P. F., H1765 Davila, R. M., L309 Davin, D., G872 Davis, A. E., G224 Davis, B. H., C604 Davis, C. W., L1021 Davis, H. W., L926 Davis, J. A., F110 Davis, J. M., H2167 Davis, K. L., H178 Davis, M. J., H962 Davis, S. K., E858 Davis, S. N., E521 Davis, V. H., C350 Davison, J. S., R223 Dawes, K. E., L278 Dawicki, D. D., L666 Day, T. A., R1336 Deam, D. R., R1526 DeAnda, A., Jr., H2553 De Bandt, J. P., E298 De Champlain, J., R1449 Decker, R. S., C993, C1002 Decking, U. K. M., H2460 Deen, W. M., F736 DeFily, D. V., H2487 DeFronzo, R. A., E1089 De Groot, C. J. M., H1613 Deibler, G. E., R549 De Jong, M., E974 De Kreutzenberg, S. V., E1089 Delalandre, A., R105 De la Monte, S., L589 Delcroix, M., H817 Delisee, C., H404 De Lisle, R. C., G717 DeLisle, S., C1485

Dellsperger, K. C., H1667 Delmar, M., H1181 Delmez, J., F746 Delp, M. D., H1428 Delp-Archer, C., C472 Del Prato, S., E1089 Del Rey, A., R902 Del Rivero, M., G586 De Luca, B., R1533 Del Vecchio, P. J., L465 DeMeersman, R. E., H2239 De Meirleir, K., C869 DeMello, D., L309 DeMichele, S. J., G568 Demolder, M. J. M., H2036 De Moor, K., C936 Deneke, S. M., L21 Deng, X., F175 Dent, J., G389, G424, G868, G1004 Denton, D. A., R1526 Denton, P. K., H1803 Denyer, G. S., E752 De Ondarza, J., G24 Depré, C., H1265 Deprés-Brummer, P., R1111 Dériaz, O., E1051 Derman, M. P., F1211 DeRojas-Walker, T. C., E360 De Santis, B. J., C1215 Deschamps, D., G107 Desche, P., H1947 Desco, M., H233 DeSimone, J. A., C1295 Desrochers, S., E660 Des Rosiers, C., E446 Devente, J. E., E866 Devine, J. O., H1071 DeVivo, C., E996 Devor, D. C., C70 De Winkel, M. E. M., H987 DeWitt, D. L., F1198, L294 Diamant, D., F435 Dibner-Dunlap, M. E., H218, R310 DiBona, G. F., R112, R117 Di Bonito, P., E248 DiCarlo, S. E., H662 Dickstein, M. L., H2056 Diekmann, S., G183 Dienel, G. A., R445 DiMicco, J. A., G514 Dinkelborg, L. M., H194 Dinneen, S., E595 Dinudom, A., G806 Dion, R., H1265 Di Rienzo, M., H1606 Disbrow, E. A., R85 Di Scala-Guenot, D., C413 Diwa, A., E168 Dixon, S. J., C1430, E565 Djouadi, F., F634 Doan, T. N., H278 Dobbins, R., E521 Dobbs, L. G., L181 Dobson, A., R1101 Docter, R., E974 Doerschuk, C. M., L27 Dohm, G. L., E453, E866, E1154 Doi, K., H2561 Doi, Y., C762 Dol, F., H404 Dolan, P. L., E1154 Dollinger, S. J., C45

Dominici, F. P., E745

Dominiczak, A. F., H1122 Dong, X.-W., R324 Doohan, M. M., C366, H1838 Doong, M.-L., G171 Dora, K. A., E305, E797 Dorado, D. G., H233 Dorella, M., E1089 Dorin, J. R., C297 Dornand, J., G522 Dørup, I., E849 Doucet, A., C1277, F1141 Douglas, J. S., L551 Dousa, T. P., C741 Downey, J., H1862 Doyle, N. A., L27 Drago, N. M., E153 Drake, P. G., E60 Dransfield, D. T., H202 Dreux, C., G1043 Drouhault, R., E1215 Drucker, D. J., C846 Drumm, M. L., C636 Dua, K. S., G772, G1037 Duan, R.-D., G1060 Dube, S., H788 Dubinett, S. M., H1343, R808 Dubner, H., G300 Dubreuil, P., E660 Ducher, M., R382 Dudley, G. A., C869 Duffield, M. J., H1096 Duling, B. R., H729 Dumont, I., R549 Dunbar, L. A., F285 Duncker, D. J., H1891 Duncker, H.-R., L753 Dunham, P. B., C660, C1026 Dunn, S. T., F1038 Dunning, B. E., R475 Dunsmore, S. E., L336, L885 Dupuy, F., E1039 Durán, W. N., H399 Durante, W., H1158 Durham, J. P., H767 Düsing, R., C14 Dusso, A., F746 Dvorak, B., R266 Dyck, D. J., E1007

#### E

Eagon, J. C., G959 Easley, K. A., H569 Eaves, L. A., E288 Ebb, R. G., C1395 Ebert, B. L., C1362 Eble, D. M., H2426 Ebner, T. J., R1153 Eckelman, W. C., R1491 Eckert, R. L., C1215 Eddahibi, S., H828 Eddlestone, G. T., C181 Edelbroek, M. A. L., G424 Edelson, J. D., L455 Edgerton, V. R., C527 Edmunds, L. H., Jr., H1352 Edremitlioğlu, M., H260 Edsall, L. C., C402 Edwards, A., F736 Edwards, R., F754 Edwards, S. J., R1217 Efendić, S., E1046 Egan, B. M., R562 Egan, M. E., C243 Egashira, K., H1966

Egbrink, M. G. A. O., H909 Ehardt, J. S., H1694 Ehring, T., H886 Eisenhofer, G., G641, R924 Eismann, A., H1343, R666 Eizirik, D. L., E580 Eki, Y., H1757 Ekström, P., G59 Elalouf, J.-M., F1070 Eldershaw, T. P. D., E797 El Ghissassi, M., R1401 El-Hayek, R., C1381 Elin, R. J., H1634 El-Khoury, A. E., E174 Ellenberger, H. H., R403 Elliott, S. J., H278 Ellis, E. F., H68, H458 El-Mir, M. Y., G685, G754 Elmquist, B. J., C978 Elton, T. S., L95, L328 Elzie, J. L., F770 Elzinga, G., H1510 Emala, C. W., L101, L935 Emmanouel, D. S., F398 Endert, E., E813 Endo, T., R528 Enea, I., H2352 Ene-Iordache, B., F972 Eng, R., L407 Engbers, C., E745 Engel, J., E941 Engelhardt, J. F., L657 Engfred, K., E636 England, B. K., C1395 Engle, M. J., C1401 Enson, Y., H1521 Entman, M. L., H499 Epsztejn, S., C1354 Erger, R. A., L117 Erhard, W., G183 Erkelens, C., R1178 Ermert, L., L753 Ermirio, R., R1464 Ertel, E. A., C985 Ervin, M. G., R358 Escartín, P., G459 Esler, M. D., R278 Espiner, E. A., R201 Esposito, B., H2288 Esser, K. A., C466 Estell, K. P., G872 Esteve, J. P., E343 Euler, D. E., H295 Evanoff, H. L., L856 Evans, C. H., C382 Evans, K. K., F1109 Evans, T. W., H2260, L509 Evans, W. J., E1143, R208 Everts, M. E., E974

#### .

Faber, J. E., H2068 Fabian, A., C520 Fahrenberg, J., R865 Falck, J. R., F931 Falk, P., G553 Fallon, M. B., C1186 Falloon, B. J., H670 Fan, J., R970 Fan, L., R1411 Fandrich, R. R., H1927 Fändriks, L., R924 Fang, S. L., L615

Ezzell, R. M., G361

Fanjul, M., C1241 Fann, J. I., H2553 Fantaskey, A. P., R135 Fantini, G. A., H2167 Farber, J. L., C676 Farke, W., R192 Farley, D. M., R164 Farley, L. S., L201 Farquhar, M. G., F514 Farraway, L., C1492 Fauteck, S. P., C419 Favero, J., G522 Favre, H., C1277 Fehér, G., H2202 Feher, J. J., S10 Fehmann, H. C., E40 Feigl, E. O., H895, H1973 Feild, M. R., C1387 Felder, R. A., F1185, R231 Felder, R. B., H1086, H1343, R487, R707 Feldmann, G., G107 Felipe, A., E368, H1343, R598 Feneley, M. P., H550 Feng, C. J., L302, L532 Feng, J., H1992 Fennessey, P. V., E705 Fenton, J. W., II, C958 Féraille, E., C1277 Ferguson, A. V., H1343, R625 Fermini, B., H1992 Fernandez, C. A., E446 Fernezlian, S. M., L781 Ferrannini, E., E1 Ferrari, R., H391 Ferrari, V. A., H1304 Ferré, F., E825 Ferrier, G. R., H999 Feth, F., R192 Fewell, J. E., H1734 Fiatarone, M. A., R208 Fieseler, P., E949 Figarella, C., C1241 Fiksen-Olsen, M. J., F404 Fildes, R. D., F279 Filho, I. P. T., H802 Filippov, G., L589 Finder, J., L862 Fink, M. P., G361 Finkbeiner, W. E., L347 Finkelstein, J. N., L826 Fiorucci, S., G968 Firth, J. D., C1362 Fisch, C., G107 Fischbarg, J., C1077 Fischer, E., F1164 Fischer, H., C886 Fisher, D. A., E33 Fisher, K. Y., R1034 Fisher, R. M., E588 Fisher, R. S., C557 Fisher, S. A., C910 Flamion, B., F53 Flanagan, S. W., R28 Fleming, J. B., H1373 Fleming, R. Y. D., E75 Fleming, S. E., G879 Flesche, C. W., H2460 Fletcher, J. R., H1954 Fletcher, M. P., H448 Flogerzi, B., G276 Florez-Duquet, M. L., R931 Floros, J., L162

Flynn, N. E., R334 Flynn, T. G., H1869

Focaccio, A., H2352 Fogel, R., G780 Folkerd, E., F718 Fontaine, E., E965 Fontenot, H. J., C1414 Ford, G. D., S10 Forker, E. L., G189 Forrest, J. N., Jr., C70 Forte, J. G., G387 Foss, K. A., L381 Foucart, S., C829 Fountain, J. D., L526 Fourmanoir, P., F468 Fournier, T., E825 Fox-Threlkeld, J. E. T., G161 Franceschi, R. T., C1430 Frangos, J. A., H535 Frank, J. S., C1126 Franken, P., R1365 Franki, N., C792 Fransen, P. F., H2036 Fransen, R., F1229 Frascerra, S., E1 Fraser, J., F643 Fraser, K. A., R223 Fraser, R., G868 Frater, Y., H1869 Frattola, A., H1606 Frayn, K. N., E588 Fredberg, J. J., C1062 Freedman, A., H467 Freedman, J. E., C520 Freeman, B. A., L78, L374, L455, L501, L697 Freeman, R. H., R1137 Freeman, S., H1343, R651 Frerichs, K. U., R445 Freudinger, R., F899 Friberg, P., G641, R924 Fricker, G., F46 Friedlaender, M. M., C376 Friedlander, G., L390 Friedman, D. B., L251 Friedman, M. I., H1343, R299, R676 Friedman, P. A., F89 Friess, E., E107 Frindt, G., F480 Frizzell, R. A., C70 Froissart, M., F1224 From, A. H. L., H1891 Fromenty, B., G107 Fromm, H., G300, G908 Fromm, M., G725 Frost, R. A., R970 Fry. A., C869 Fryburg, D. A., E55, E820 Fuchs, E., F240 Fujimoto, Y., E1184 Fujise, Y., E1070 Fujiwara, H., H1149 Fujiwara, I., F410 Fukagawa, N. K., E174, F613 Fukuchi, Y., L846 Fukui, M., C1332 Fukushima, T., L399 Fukutomi, H., G933 Fuller, C. R., G631 Fullerton, D. A., L1029 Fung, D. L., R85 Furesz, T. C., C755 Furman, M. J., L12 Furness, D. N., C1

Furumi, K., E531

Furuya, H., F490

Fushimi, K., C1546 Fyfe, B. S., H2167

Gabaldón, A. M., R931 Gaballa, M. A., H2092 Gabb, M., G389 Gabbai, F. B., F1004 Gabbard, S. R., R1050 Gabriel, S. E., C708 Gaehtgens, P., H25 Gagin, G. A., R1303 Gaia, G., H391 Galbo, H., E636, E980, R72 Galens, S., L519 Galitzky, J., E1135 Gall, D. G., G416, G622 Gallieni, M., F746 Gallop, P. M., H2274 Galvan, A. Q., E1 Ganapathy, V., F391 Ganguly, T., G11 Gann, D. S., E1065, H1343, R715 Ganz, M. B., F1081 Gao, B., R1365 Gao, J., C30 Gao, P., C1460 Gao, Y., C792, H1586 Garami, M., E1108 Garbán, H., H467 García-Estañ, J., E897 García-Lafuente, A., H233 García-Pérez, A., C402 Garcia, C., H404 Garcia, D. K., E858 Garcia, J., H1821 Garcia, J. G. N., L926 Garcia, N. H., F730 Garcia-Romeu, F., C434 Gardner, A. W., E1192 Gardner, D. G., E1108 Garland, A., L957 Garman, R. L., G90 Garnovskaya, M. N., F122 Garofano, R. P., H2239 Garrison, E. A., H2418 Garvin, J. L., F730 Gasc, J.-M., F922 Gaskill, M. B., R349 Gaspo, R., R1449 Gasson, C., C1018 Gaudin, C., H1368 Gaugl, J. F., H848 Gautier, N., E604 Gavras, H., R156 Gaznabi, A. K. M., F279 Geary, C. A., L1021 Gebber, G. L., R1472 Geddes, D. M., C297 Geering, K., C1207 Geisbuhler, T., H1659 Gekle, M., F899 Gelato, M. C., R970 Gelder, C. M., C331 Gelfand, R. A., E55 Geller, D., L862 Gelman, S., G988 Gelsema, A. J. M., R1171 Genard, J., F468 Gentry, D., F815 Geppetti, P., L263 Gerdes, A. M., H2345 Gerner, P., C1414

Gershon, M. D., G339 Gesek, F. A., F89 Gespach, C., G431 Gettys, T. W., G300, G908 Ghatei, M., F754 Ghishan, F. K., G917 Ghitescu, L., F913 Ghorbani, M., R98 Giacca, A., E1046 Giardina, J. F., H1471 Gibbons, G. F., E588 Gibbons, S. J., C829 Giboudeau, J., E298 Gidday, J. M., H871 Giebisch, G., F204, F211, F234 Gietzen, D. W., R1203 Gifford, A., H1694 Gilbert, R. J., G487 Gilbey, M. P., R1230 Gilks, B., L832 Gillen, C. M., R414 Gilles, M. A., H218 Gillies, K. J., H411 Gillies, R. J., F671 Gillis, R. A., G292 Gilmour, R. F., Jr., H1258, H2513 Gimble, J. M., E213 Gimple, L. W., C1141 Gintant, G. A., H604 Giorgino, F., E987 Gisolfi, C. V., R28 Gitter, B., L957 Giudicelli, J., G41 Giugliano, D., E1167 Giunta, R., E1167 Gladden, L. B., R1121 Gladfelter, A., C1114 Glaeser, B. S., C936 Glamour, T. S., E789 Glasheen, W. P., H1555 Glatz, M., F802 Gleadle, J. M., C1362 Gleason, M. M., C1301 Gleeson, P. A., F363 Gnudi, L., E956 Göbel, B. O., C14 Goda, T., G1066 Gödecke, A., H2460 Godin, M., H794 Goetzl, E. J., L584 Göke, B., E40 Golanov, E. V., R454 Gold, M. R., H1749 Goldberg, A. L., E996 Goldberg, A. P., E484 Goldberg, H., F110 Goldenring, J. R., H202 Goldhill, J. M., G823 Goldman, S., H2092 Goldspink, D. F., E288 Goldstein, B. J., E932 Goldstein, D. S., G641 Goligorsky, M. S., F251 Gollan, J. L., G1017 Golstein, P. E., C111 Goltzman, D., E832 Gomez, G., G71 Gomez, R. A., F1117 Gomez-Angelats, M., E368 Goñalons, E., G207 Gong, J., R208 Gong, Q.-H., C490

Gonzales, E. R., H871

Gonzales, N., E100

González, J. D., R1442 Gonzalez, M. A., H233 Gonzalez, P. K., G361 González-Cadavid, N., H467 Goodship, T. H. J., E121 Goodwin, W. B., R1429 Goodyear, L. J., E987 Goran, M. I., E917 Gordienko, D., F251 Gordon, J. B., H1422 Gordon, J. I., G553, G813 Gordon, K. L., F273 Gordon, M. M., G33 Gore, R. W., C1308 Gores, G. J., G613 Gorodeski, G. I., C1215, H1343, R614 Goto, Y., H2544 Gottardi, C. J., F285 Gotthardt, U., R865 Gough, S. R., R1117 Gould, E. M., C1425 Gould, R. M., C308 Gourlet, V., R253 Goyal, R. K., C877, G979 Gozal, D., R324 Grace, M., R248 Graham, K. A., E121 Graham, R. M., H781 Graham, T. E., H1343, R759 Grange, R. W., C596 Granger, D. N., G116, H1643, H2175, H2224 Granger, H. J., H490, H1651 Granger, J. P., R375, R395 Granneman, J. G., C1040 Grassi, B., H1453 Grasso, R., H7 Gratama, J. W. C., H974 Grattan, D. R., E685 Grattan, K., L85 Graves, A., L374 Graves, J. P., L432, L1006 Gray, M. A., C823 Greeley, G. H., G71 Green, J., C1090 Green, J. M., L894 Green, R., F778 Greenberg, S., L991 Greenberg, S. G., F948, F953 Greene, A. S., H33 Greenleaf, J. E., H1343, R583 Greenlee, W. J., H1343, R820 Greenwood, B., G514 Greiber, S., C1395 Grenader, A. C., F423 Grendell, J. H., G592 Gresele, P., G968 Gresores, A., E237 Greyson, C., H1821 Grieshaber, M. K., H194 Griffiths, E. J., H2396 Griffiths, M. J. D., H2260, L509 Griggs, R. C., E67 Grill, H. J., H1343, R676 Grimbert, S., G107 Grimm, D. R., H2239 Grimminger, F., H2252, L747, L753

Grisham, M. B., H2175, H2224

Grodet, A., L390

Gröne, H.-J., F240

Gronert, G. A., R85

Grönhed, P., G102

Gross, G. J., H2157

Gross, N. J., L438 Grosse, R., R536 Grouzmann, E., H2267 Grove, M. L., C1401 Grove, R. N., L885 Grover, G. J., H242 Grubb, B. R., G505 Gruenert, D. C., L347 Grundy, D., G355 Gruwel, M. L. H., H351 Grynberg, A., H308 Gstraunthaler, G., C449 Gu, Z.-F., G739 Guan, D., G251 Guan, K.-L., G1060 Guan, Z., R1411 Guernsey, L., L851 Guerriero, V., Jr., R92 Guezennec, C.-Y., E328 Guggino, W. B., C243 Guida, R., E248 Guilford, W. H., C1308 Guillaume, D., R1236 Guillery, E. N., F710 Guizouarn, H., C434 Gukovskaya, A. S., G900 Guldner, J., E107 Gulve, E., C30 Gulve, E. A., R997 Gumà, A., E613 Gunst, S. J., C563, C1267 Guo, K., L245 Guo, X., C1503 Guo, Y.-S., E1199 Gupta, A., F357 Gurevicius, J., H39 Gustafson, A. W., R1303 Gustin, M.-P., R382 Gute, D. C., H2063 Guth, P. H., G586, G791, R569 Gutierrez, H., L697 Gutierrez, H. H., L501 Gutierrez, J. A., R92 Gutkowska, J., R1411 Guy-Crotte, O., C1241 Guyenet, P. G., R272, R428, R1429

#### H

Habash, D. L., E375 Habuchi, Y., H1053 Hack, C. E., H1352 Hackney, C. M., C1 Haeberle, J. R., C903 Hagberg, J. M., E484 Hageman, L. P., E1161 Hagenbuch, B., G18 Hagiwara, H., C496 Hahn, A. R., L1029 Haidet, G. C., H92 Haile, D., H653 Hall, I. P., L1 Hall, J. L., E797 Hall, R., S32 Hallemeesch, M., R1163 Hallenbeck, J. M., R445 Halseth, A. E., R130 Halstead, L., F357 Halter, F., G276 Hamdan, W. S., G695 Hamilton, C. A., H1122 Hamilton, J. S., R931 Hamilton, W. F., R963 Hamm, P. H., H1343, R683

Hammel, H. T., H2133 Hammerman, M. R., F73, F128 Hammond, J. M., E1057 Han, R. N., L78, L136, L455 Han, W.-P., H1258 Hanaoka, K., F20 Handberg, A., E980 Hang, J., H1373 Hannon, T. S., E925 Hansen, D. E., H1803 Hansen, P., C30 Hansen, P. A., S1 Hanson, A. S., F553 Hanson, G. R., H2195 Hanson, R. B., G959 Hara, A., H614 Harasym, P. H., S56, S61 Hardeman, E. C., C466 Hardin, J. A., G416 Hardin, J. M., E917 Harding, R., F868, R303 Hargrave, R. W., R468 Hargreaves, K., H584 Harken, A. H., L1029 Harper, R. M., R324 Harris, J., H1343, R651 Harris, R. B. S., R874 Harris, R. C., C925 Harrison, N. K., L278 Hartley, C. J., H499 Harvey, R. D., C636, H1795 Hasebe, N., H781 Hasegawa, S., L424 Hashida, M., G849 Hashimoto, S., L181 Hasler, W. L., G539 Hasselbalch, S. G., E1161 Hasser, E. M., R171 Hassoun, P. M., L809 Hata, K., E558, H2544 Hatakeyama, N., C877, G979 Hatakeyama, Y., G200 Hatem, S. N., H1195 Hathaway, D. R., C903 Haudenschild, C. C., H749 Hay, J. G., L565 Hayama, N., R8 Hayashi, H., H1239 Hayashi, T., R859 Hayashi, Y., H1249 Hayes, J. S., G90 Haymond, M. W., E1123 Haynes, J., Jr., H1862 Hays, R. M., C792 Hayward, L. F., H1086, H1343, R707 Hazon, N., R1359 He, X.-R., F948, F953 Heagerty, A. M., H670 Healy, D. P., F220, F423 Heaton, J., H2211 Hebbel, R. P., C227 Hébert, C. A., L85 Hébert, R. L., F145 Hebert, S. C., F525, F1124, F1132 Hecht, G., G374 Heck, G. L., C1295 Hegarty, A. A., H1086 Heidecke, C.-D., G183 Heigenhauser, G. J. F., E1007 Heineman, F. W., H82 Heintz, G. G., G215 Heistad, D. D., H359

Hekali, P., H1232

Helander, H. F., G387 Hellman, P., F435 Helmchen, U., F940 Héluy, V., E825 Hemming, V. G., L1006 Hendrich, K., H1891 Hennemann, G., E974 Henning, S. J., G139 Henninger, D. D., G116 Henrich, W. L., F266 Henriksen, E. J., R130 Henry, M., L636 Henschke, P. N., H278 Herbert, J. M., H404 Herman, A., F468 Herman, L. A., L539 Herman, P., L390 Herman, W. H., F760 Hermann, G. E., G1 Hermes-Lima, M., R1386 Hermey, D. C., E312 Hermiston, M. L., G813 Hermus, A. R. M. M., E551 Hernandez, I., H33 Herrera, M. C., G1051 Herring, W. J., C1395 Herrington, J., F1154 Herrnreiter, A., L519 Hershenson, M. B., L894 Hershman, J. M., H1343, R808 Hetherington, C., E121 Heublein, D. M., F657, H921 Heusch, G., H886, H2294 Heuser, I., R865 Hew, M., E752 Heydrick, S. J., E604 Hickey, M. S., E453 Hickey, R. F., H879 Hickson, R. C., E730 Hierholzer, C., G183 Higham, S. C., C1252 Hildebrand, S. V., R85 Hildebrandt, J.-P., C944 Hill, M. R., E213 Hill, M. R. S., H1939 Hillsley, K., G355 Hillyer, D. E., E678 Himms-Hagen, J., R98 Hines, T., H1343, R736 Hipworth, S., L407 Hirakawa, Y., H544 Hiramatsu, Y., R1491 Hirano, Y., H2321 Hiraoka, M., H2321 Hirata, Y., H162, H2017 Hiroe, M., H162 Hirose, S., C496 Hirshman, C. A., L101, L187, L201, L207, L642, L935 Hiruma, H., H2003 Hittinger, L., H781 Ho, A. K., E458 Ho, K., F1132 Ho, L. T., H584 Ho, W., H584 Hochachka, P. W., H1343, R816 Hoek, J. B., C676 Hoffman, B. B., H1006 Hoffman, L. A., H2167 Hoffman, W. D., H692, H1634 Hoffmann, F., F839 Hoffmann, G., C14 Hofmann, C., G1037 Hogaboam, C. M., G673

Hogan, M. C., H1453

#### **AUTHOR INDEX TO VOLUME 268**

Holcomb, T., C449 Hollande, E., C1241 Hollis, T. M., H535 Holloszy, J. O., C30, R997 Holloway, R. H., G128, G389 Holm, S., E1161 Holmes, C., G641 Holmes, J. W., H1788 Holness, M. J., E722 Holsboer, F., E107, R865, R1310 Holst, J. J., E949 Holtkamp, G. M., R989 Holzgrefe, H. H., H836 Homaidan, F. R., G270 Homma, S., F808 Hong, L., H2048 Honma, K.-I., R528 Honma, S., R528 Hool, L. C., C366, H1838 Hooper, D., G641 Hooper, S. B., F868, R303 Hootman, S. R., G24 Hopfer, U., C1215, C1503 Hopkins, D. A., R403 Horetsky, R. L., E6 Hori, T., R21, R1406 Horie, M., H2358 Horisberger, J.-D., C590, C1207 Hornby, P. J., E1128 Horowitz, M., G424, G868, G925 Horsley, C. J., R1209 Horvath, S. M., H2311 Horwitz, B. A., R931 Hosseini, J. M., H1634 Hould, F.-S., G959 Houmard, J. A., E453 Houston, M. E., C596 Howard, S. C., L245 Howard, T., G33 Howe, R. S., H56 Howlett, S. E., H999 Hove, E., F532 Hoyle, D. H. R., E996 Hoyt, E. C., G631 Hruska, K. A., F357 Hsu, P., H591 Hsu, W. H., E1027 Hu, L., H2375 Hu, S.-C. S., L576 Hu, Z.-W., H1006 Hua, X., E213 Huang, B. S., H61 Huang, C. L.-H., F447 Huang, H.-S., H2114 Huang, L., L374 Huang, W., H1343, R634 Huang, W.-H., H1115 Huang, W.-S., E33, E572 Huangfu, D., R1429 Huch, K. M., R156 Huckle, W. R., H1343, R820 Hudetz, A. G., H2202 Huggins, J. P., L1057 Hughes, B. A., C1164 Hughes, M. R., F1038 Hughson, R. L., H1682, H1688 Hui, H., S32 Huizinga, J. D., C1492 Hulbert, A. J., H1343, R641 Hulter, H. N., F802 Hultman, E., E127, E1007 Hümmelgen, M., H886 Humphreys, B. D., C201 Humphreys, S. M., E588 Huntley, J., R889

Hurst, L. J., G90 Hussain, M., L625 Huston, M., C127 Huxley, V. H., H1139, H1856, R468 Hyde, J. F., G11 Hyman, A., H2211

Iadecola, C., R286, R1153 Ianuzzo, C. D., C1387 Ianuzzo, S. E., C1387 Ibrahim, I. N., L532 Ichikawa, H., H1714 Ichikawa, K., H2017 Ichikawa, S., L584 Idänpään-Heikkilä, J. J., E758 Ideker, R. E., H2336 Idell, S., L972 Idriss, S. F., H2336 Igarashi, Y., F410, F1148 Ikebe, M., L999 Ikeda, K., L361 Ikeda, U., H1021 Ikegami, M., L636 Ikemoto, N., C1381 Illek, B., C154, C886 Illiano, S., H865 Imai, E., F1102 Imai, M., F20 Imai, S., H2084 Imbert-Teboul, M., F1070 Imoto, T., R1019 Inagami, M., E1184 Inazu, M., H138 Ingelfinger, J. R., F435 Ingels, N. B., Jr., H2553 Inglis, S. K., L526 Ingram, D. K., E941 Inman, S. R., F302 Inoue, C. N., F410 Inoue, H., E391, L85 Inoue, M., G47 Inoue, R., C162 Inoue, T., F1102 Inscho, E. W., F876 Intaglietta, M., H802 Ioculano, M., H1412 Ireland, A. C., G128 Ireland, R. A., E312 Ishibashi, K., C1546 Ishigaki, M., L361 Ishikawa, S.-E., H1021 Ishine, T., H1383 Ishitani, K., L361 Ishiyama, S., H162 Ishizaki, T., L123 Ismailov, I. I., C1148, C1450 Iso, T., H2084 Isozaki, T., F1218 Israbian, V. A., L471 Israel, R. G., E453 Istfan, N. W., E255 Ito, A., H1966 Ito, H., H162, L214 Ito, K., L63 Ito, O., F1148 Ito, S., G933 Ito, Y., C162, H2274 Itoh, S., H1149 Iversen, P. O., H112 Ives, H. E., C147 Ivester, C. T., H2495 Ivy, D. D., H288

Iwasaki, T., H1781 Iwasaki, Y., R349 Iwata, F., G153 Iwata, M., F1154 Izumi, H., R438, R1188, R1196, R1423

#### J

Jackson, D. C., H1343, R683 Jackson, E. M., E889 Jacob, H. S., L321 Jacobs, J., E521 Jacobs, R., E623 Jacobs-El, J., C1045 Jacobson, H. R., F931 Jacobson, K., G673 Jacquemin, E., G18 Jagger, C. J., E318 Jahn, L. A., E55, E820 Jain, B., L911 Jain, M., L894 Jaisser, F., C1207 Jakobsen, J., E1161 Jalife, J., H1181 James, A. F., H2358 Jamieson, G. G., G868 Janakidevi, K., L465 Janczewski, A. M., H916 Janssens, C. J. J. G., H909 Janssens, S. P., L589 Jardine, E., H1122 Järvinen, V., H1232 Jarvis, J., E277 Javed, N., G465 Javeshghani, D., R1411 Jayaweera, A. R., H1555 Jefferson, D. M., F398, L615 Jefferson, L. S., E6 Jehle, J., R549 Jen, J. F., F680, F693 Jenden, D. J., R1520 Jeneson, J. A. L., C1474 Jenkinson, E., H1814 Jenkinson, S. G., L21 Jennings, G. L., H411, R278 Jensen, M. D., E433 Jensen, R. T., G605, G739 Jéquier, E., E630, E1051, E1083 Jerome, S. N., H2063 Jetté, M., E660 Jia, X., E645 Jiang, H., L739 Jiang, L., C201 Jiao, J.-H., H1405 Jiménez, M., G207 Jin, G.-F., E1199 Joannides, R., H794 Jobe, A. H., L636 Jobe, R. L., H1803 John, G. W., R366 John, S. A., C968 John, W., G242 Johns, D. C., H506 Johns, R. A., H2216 Johnson, A., L972 Johnson, C. M., E433 Johnson, L. R., G416 Johnson, R., E917 Johnson, R. L., H1694 Johnson, R. G., Jr., H1343, R820 Jöhren, O., F240 Jones, E. A., G346 Jones, J. H., R85

Jones, K., G424 Jones, K. A., L166 Jones, K. L., G925 Jones, R. H., E766 Jones, R. O., E1065, H1343, R715 Jones, S. C., H569 Jones, D. E., Jr., G872 Jones, H., Jr., F532 Jordan, M., E572 Jose, P. A., F279, F710 Joseph, C. M., E476 Joseph, L. J., E1143 Joshi, I., L625 Joson, L. A., C1252 Jougasaki, M., F657 Jourd'Heuil, D., G260 Joyner, R. W., H2476 Jozsi, A. C., R414 Juckett, M. B., L321 Judd, A. M., E114 Jue, T., H1675 Jung, F., F435 Jung, K. Y., C402 Jung, R., H218 Jungermann, J., G328 Jurasinski, C. V., E491 Juschka, B. B., S61 Jyotirmoy, N., G242

Jones, J. J., H955

#### K

Kabiersch, A., R902 Kadekaro, M., H1343, R651 Kadowitz, P. J., H2418, L302, L532 Kahn, B. B., E956 Kahn, N. N., H117 Kahrilas, P. J., G232, G320 Kaiser, L. R., L657 Kaissling, B., F784 Kaji, D. M., C1018 Kajita, J., C771 Kakar, S. S., E145 Kakei, M., E185 Kaku, K., E391 Kaley, G., H1628 Kalhan, S. C., E789, E910 Kalichman, M. W., H740 Kalina, M., L144 Kamada, T., F1102, H1249, H1418 Kamimura, S., F746 Kamp, D. W., L471 Kampine, J. P., H2202 Kanaide, H., C1332, H544 Kanalas, J. J., C442 Kanamori, T., H2281 Kandarian, S. C., C419 Kaneko, H., G548 Kaneko, M., E1070 Kaneko, T., E391, F1102 Kanemitsu, Y., R1406 Kang, J., C278 Kannan, G. S., F770 Kanwal, S., C978 Kapadia, S., H517 Kapusta, D. R., H1343, R723 Karam, S. M., G387 Kardami, E., H1927 Karemaker, J. M., H2145 Karinch, A. M., L162 Karita, K., R438, R1188, R1196 Karlson, K. H., C1520

Korsmeyer, S. J., F73

Korthuis, R. J., H2063

Karlstad, M. D., G568 Karniski, L. P., F710 Karwande, S. V., H1757 Karzai, W., H692 Kasahara, T., H1021 Kashgarian, M., F13, F651 Kaskel, F. J., R231 Kasner, S. E., F1081 Kassab, S., R395 Katafuchi, T., R1406 Katagiri, H., F385 Katayama, M., L56 Kates, A.-L., R98 Kathuria, S., E100 Kato, S., H2104, H2495 Kato, T., R395 Katoh, H., H1239 Kaul, S., H1555 Kawai, N., H1343, L589, R816 Kawamoto, S., G47 Kawasaki, K., C1546 Kawashima, S., H1781 Kaye, A. D., L302, L532 Kaye, D. M., R278 Kaysen, G. A., F532 Kedem, J., H1202 Keeling, B., L832 Keep, R. F., H646 Keiding, S., E636 Keil, L. C., R1040, R1069 Keiser, J. A., H1343, R699, R896 Keith, I. M., L1036 Keizer, J., C780 Kelleher, M. D., L894 Keller, E., H1875 Keller, P., G41 Kelley, K., R1327 Kelling, C. L., L214 Kelly, K. A., G959 Kelly, P. A., G431 Kelly, R. A., H1293 Kemp, R. A., L918 Kemppainen, R. J., E85 Kempson, S. A., C1512, F784 Kennedy, R. H., C1414 Kent, S., R1327 Kerger, H., H802 Keriel, C., E965 Kersten, J. R., H720, H1667 Kersting, U., S26 Kettner, C., H1352 Kevin, N., H1343, R820 Khan, M. A., F363 Khanna, S., R1336 Khimenko, P. L., H1954 Khraibi, A. A., H1343, R731 Kibble, J. D., F778 Kien, C. L., E375 Kiesslich, O., H25 Kight, C. E., G879 Kihara, I., C1546 Kilav, R., F1017 Kilpatrick, L., E491 Kim, C. H., R1129 Kim, D., H399 Kim, F. J. W., G397 Kim, H.-J., R1500 Kim, H.-Y., C402 Kim, J. K., E712 Kim, M. S., G539 Kim, S. H., R1129 Kim, Y. K., R1539 Kimball, S. R., E6 Kimura, K., E1184, F1009 Kimura, M., C958

Kingwell, B. A., H411, R278 Kinne, R. K. H., H194 Kinnula, V. L., L71 Kinoshita, M., H2281 Kinoshita, S., R231 Kinsella, J. P., H288 Kinugawa, T., R310 Kirchgessner, A. L., G339 Kirkegård, P., E636 Kirkpatrick, P. J., H213 Kirkpatrick, R. D., H170 Kirschner, R. E., H2167 Kissane, J., F258 Kitagawa, K., H1249 Kitamura, K., C101 Kivlighn, S. D., H1343, R820 Kizer, N. L., F347, F854 Kjær, M., E636 Klarr, S. A., H646 Kleeman, C. R., C1090 Kleftogiannis, F., E623 Klein, S., E813 Kleine, T. J., C1114 Kleiner, D. E., G346 Kleinknecht, C., F793 Klevay, L. M., H1115 Klip, A., E613 Klir, J. J., R480 Klitzner, T. S., C1126, H1723 Kloner, R. A., H426 Kluge, K. A., H506 Kluger, M. J., H1343, R78, R480, R699, R896 Knabb, R. M., H1352 Knabe, D. A., R334 Knapp, H. R., R164 Knight, D. R., H1453 Knox, F. G., H1343, R731 Knudsen, G. M., E1161 Knuepfer, M. M., H1343, R666 Knuese, D. E., H2202 Ko, Y., C14 Kobara-Mates, M., G232 Kobayashi, A., E1070, H1239 Kobayashi, S., C1332, H544 Kobayashi, Y., G451 Kobzik, L., H1293 Koch, M. A., R171 Kochevar, D. T., H1651 Koehler, E., H1343, R651 Koev, C. A., H1634 Koga, K., H1149 Koga, S., C1104 Kohama, A., H856 Kohan, D. E., L192 Kohin, S., H781 Koike, K., G397, G471, L1029 Koldovský, O., G1066, R266 Koller, A., H1628 Kolls, J. K., L991 Komers, R., F588 Kompa, S., H886 Komwatana, P., G806 Konarzewska, H., H1757 Kondo, M., C1342 Kondo, Y., F410, F1148 Kone, B. C., F99, F770 Kong, W., R266 Konno, K., C1342, L56 Koomans, H. A., F1229 Koomen, G. C. M., F543 Kopnisky, K., C700 Kopp, U. C., R164 Koritnik, D. R., H377

Koropatnick, J., F643

Koshy, A., H377 Koss, M., F330 Koster, W. H., H836 Kotlikoff, M. I., L1, L221 Koutsouris, A., G374 Kovacs, T. O. G., G54 Kozak, C. A., F1038 Kozak, W., R480 Kozniewska, E., R1143 Kozol, R. A., G843 Kraehenbuhl, J.-P., C1207 Kraft-Stolar, D., C669 Krajcar, M., H886 Kralios, A. C., H2195 Kralios, F. A., H2195 Krämer, B. K., F39 Kramer, C. M., H1304 Kramer, H.-J., H2252 Kramp, R. A., F468 Krapf, R., F802 Krassioukov, A. V., H2077 Krauss, R. M., H1982 Kraut, J. A., F581 Kravtsov, V., L144 Kraw, M. E., L729 Kregel, K. C., R92 Kremer, D. E., R1121 Krenning, E. P., E974 Kreutzer, U., H1675 Krieger, E. M., H1773 Kristjansson, K., F1038 Kriz, W., F1164 Kroll, K., H1973 Krowicki, Z. K., E1128 Krüger, B., G328 Kruse, H.-J., C36 Ku, Z., C1369, C1375 Kubokawa, M., F211 Kucharczyk, J., R1143 Kuchel, P. W., C686 Kucich, U., H1352 Kuga, T., H544 Kuguoglu, A. F., H384 Kuipers, J. R. G., H974 Kukuljan, M., C535 Kullama, L. K., R358 Kullmer, J., F240 Kültz, D., R1003 Kumar, A., L972 Kumar, C. C., F760 Kumar, R., H2476 Kume, H., L221 Kunkel, S. L., H1343, L856, R699, R896 Kuo, T. B. J., H2329 Kupari, M., H1232 Kupert, E. Y., C191 Kupriyanov, V. V., H82 Kurdak, S. S., H1453 Kurihara, H., F514 Kurokawa, K., F20, F385 Kurose, I., H2224 Kurrasch, R. H. M., R1491 Kurscheid-Reich, D., F997 Kurtel, H., H2175 Kurtz, A., F39 Kusano, E., F808 Kusano, M., G772 Kushmerick, M. J., C480 Kutkoski, G. J., L27 Kuwahara, M., L63, L63 Kuwazuru, S., R1423

Kwiecinski, G. G., R1303

Kwo, P., G613 Kwon, E. D., C402 Kwon, O. J., L278

#### L

Labarca, P., C535 Laboisse, C. L., C1503 Labotka, R. J., C686 Lachance, D., E60 Lachance, S., R105 Lacy, D. B., E92 Lader, A. S., H1593 Ladilov, Y. V., H1531 Laekeman, G., F468 Lafontan, M., E1135 Lagaud, G. J.-L., H1223 Laghmani, K., F1224 Lahners, K. N., C1040 Laigneau, J.-P., G889 Laine, G. A., H178 Laing, J. G., C356 Laird, D. W., C968 Lakatta, E. G., H916, H2396 Lake, M., R266 Lal, R., C968, H1765 Lam, L., E1046 La Marca, C., E1167 Lamarche, L., R50 Lamas, S., F1, H1293 Lambert, F., H1947 Lambert, G. W., R278 Lambert, N., R536 LaMont, J. T., G487 Lamont, L. S., E910 Lancel, M., R1310 Landau, B. R., E660 Lande, B., L207 Lane, M. A., E941 Lang, A., E758 Lang, C. H., E219, R492, R970, R1026 Langer, G. A., C119 Langhans-Rajasekaran, S. A., C308 Langille, B. L., H558 Langin, D., E1135 LaNoue, K. F., E693 Lantelme, P., R382 Lanting, L., E100 Lantz, R. C., C1308 Lanzillo, J. J., L809 Laouari, D., F793 Laprade, R., F595 Large, V., E880 Larsen, G. L., L432, L1006 Larson, C., G232 Larson, D. M., H749 Larson, T. S., F907 Larsson, B., G59 Lash, J. M., H125, H2366 Latorre, R., C535 Lauer, C. J., R865 Laughlin, K. V., F315 Laughlin, M. H., H330, H1428 Laughlin, M. R., H82 Laurent, D., H1490 Laurent, G. J., L278 Lawler, R. G., H1343, R683 Lawrence, R. A., L21 Lawson, C. A., H2056 Layé, S., R1327 Layton, H. E., F163 Lazarowski, E. R., C425 Lazowski, K. W., G1074

#### **AUTHOR INDEX TO VOLUME 268**

Lean, J. M., E318 Learn, K. S., C1301 Leblanc, N., H1906 Lebrec, D., H1368 Lebrun, F., F1053 Lecarpentier, Y., H1947 Lechner, A. J., G311 Leclerc, J., E446 Ledderhos, C., H1343, R796 Lee, A. D., R997 Lee, D. M., E288 Lee, D. W., H265 Lee, H. C., C741 Lee, H.-C., H2024 Lee, K. S., C1173 Lee, L. H., L251 Lee, M. A., F613 Lee, P., H1343, R808 Lee, S.-D., G171 Lee, S.-L., H1343, R634 Lee, T. J.-F., H1383 Lee, W.-J., R1500 Lee, W.-S., F1124 Lee, Y.-C., F862 Lee, Y.-J., C127 Leeman, M., H817 Leenen, F. H. H., H61 Leff, A. R., L446, L519 Leff, J. A., L12 Leffler, C. W., H591, H1884, H2048 Lefkowith, J. B., F258 Le Fur, G., H404 LeGrice, I. J., H1788 Lei, D., L991 Leibach, F. H., F391 Leigh, J. S., C869 Leikauf, G. D., L601 Lejeune, P., H817 Le Marchand-Brustel, Y., E604 Leme, A. S., L781 Leonard, R., F604 Leone-Kabler, S. L., R1332 Leong, E. J., S56, S61 Leong, S., L85 Lerch, M. M., G328 Lerche, D., H25 Lerman, L. O., F404 Letsou, G. V., E48 Leung, A.-Y. H., C708 Leung, F. W., G153 Leung, P. M., H1906 Levame, M., H828 Lever, M., F227 Leverve, X. M., E965 Lévi, F., R1111 Levi, M., F309, F784 Levi, R., H1634 Levin, B. E., R389 Levin, M. S., G224 Levine, A. S., R248 Levine, J. E., R1456 Levine, M. A., L101, L935 Levy, M. N., H1939 Lew, W. Y. W., H17 Lewejohann, K., R192 Lewin, M. J. M., G889 Lewis, B., F347, F854 Lewis, D. S., E889 Lewis, P. N., C1114 Lewis, S. A., C1114 Li, B., H1702 Li, G.-R., H999 Li, H., L328 Li, J., R1153

Li, L., G451 Li, P., H1702 Li, Q., E1108 Li, S. C. Y., G451 Li, Y., E476, H426 Li, Y.-W., R272, R428 Li, Z.-Q., G82 Liao, H., C1104 Liao, J., H1343, R699, R896 Liao, L., H1158, H1643, H2175 Liddle, R. A., G90 Liedtke, C. M., L414 Lien, Y.-H. H., F671 Lieser, M. J., G843 Lieske, J. C., F604 Lilly, L. B., G1017 Lim, C.-F., E974 Lim, S. K., E298 Lima, J. A. C., H1304 Lin, B., H2211 Lin, H., R825 Lin, H.-H., F862 Lin, M. T., E839 Lin, S., G320 Lin, S. M., H2329 Linas, S. L., F553 Lincoln, T., H202 Lindeman, K. S., L642 Linden, J., E693 Ling, P. R., E255 Linscheer, W. G., G242 Lippton, H., H2211 Lipsius, S. L., H1313, H1322 Lissoos, T. W., G224 Little, T. L., H729 Liu, B., E832 Liu, G., L739, R135 Liu, H., R951 Liu, J., L136, L455, L625, L729 Liu, J.-X., H2384 Liu, L., F1038, H1927 Liu, M., L729 Liu, S., C339, C1414, L509 Liu, W. X., E48 Liu, X., L739 Liu, Y., G11 Llaneras, M. R., H1304 Llewellyn-Smith, I., R909 Llinás, M. T., R1442 Llorens-Cortes, C., F922 Lloyd, K. C. K., G54, G102 Loader, J. E., L432, L1006 Lobo, C., E705 Locke, M., C1387 Lockhart, J. C., F907 Lodhi, K. M., C496 Lods, J.-S., G1043 Löffler, B.-M., H432 Löfman, C. O., R1224 Logemann, J. A., G232 Logsdon, P., H1954 Loiseau, A., L390 LoMonaco, M. B., L826 Lompre, A.-M., H1947 Londoño, I., F913 Longhurst, J. C., H448, H526, H1358, H2114 Longmore, W. J., L129 Lopez, N., L839 Lorenson, M., E67 Lorenz, R. G., G553 Lorenz, R. R., L166 Lorscheider, F. L., S56, S61 Loscalzo, J., C520

Losier, A. M., R403

Losty, P. D., L589 Lötscher, M., F784 Lotti, V. J., H1343, R820 Louis, C. F., C1381 Lowe, J., C147 Lowenstein, C., L501 Lowenstein, C. J., H1293 Lowney, P., E925 Loyd, D., H476 Lu, L.-L., H1053 Lu, M., H1343, R577 Lu, M.-C., L368 Lu, S., L407 Lu, Y., G1012 Luba, M. C., E48, H364 Lublin, A., R66 Lubrich, D., H2183 Lucarelli, C., E1167 Lucier, G. E., S56, S61 Ludwig, M., E537 Luinetti, O., G968 Lukacs, N. W., L856 Lund, P. K., G631 Lundberg, P., C686 Lunt, D. K., E858 Lüthen, R., G592 Luthin, D. R., E693 Lutz, M. P., G328 Lutz, P. L., R1332 Luxon, B. A., G189 Lydic, R., L251, L941 Lyon, X., E1051 Lytton, J., F525

M

Ma, J., R21 Ma, P., E645 Ma, S., R487 Maassab, H. F., R78 Macaluso, F., C792 Macedonia, J., R549 MacGregor, G. A., F718 Machen, T. E., C154, C886 Mack, G. W., R414 MacLean, D. A., H1343, R759 MacLennan, D. H., C252 MacLeod, K. T., H1045 MacLeod, R. M., E114 Macynski, A. A., R1491 Madara, J. L., C472 Madden, M. C., H2505 Maddox, A., G868 Madison, J. M., C771 Madsen, K., G416 Maeda, N., H1959 Maffrand, J. P., H404 Maffre, M., R366 Magder, S., H371 Maggi, S. P., E75, E514 Magness, R. R., E237 Magnuson, T. A., H1343, R715 Magous, R., G522 Mahmood, A., C1401 Majack, R. A., H1133 Majde, J. A., R78 Mak, J. C. W., L41 Makhlouf, G. M., C171 Makhoul, I., L625 Maki, L. W., C780 Malagelada, J.-R., G286, G895 Malaisse, W. J., C611, E580 Malandro, M., G578 Malbert, C., G424 Malbon, C. C., C1460

Maldonado, E. A. L., L781 Malik, A. B., L465 Malik, K. U., H1037 Malinowska, D. H., C191 Malkinson, T. J., R919 Mallampalli, R. K., L818 Mallios, V. J., L941 Malvey, K., F1004 Mamo, J. C. L., G709 Mamoun, A. H., R520 Mancia, G., H1606 Mandon, B., F1070 Mangel, A. W., G90 Manikis, P., H1847 Mann, D. L., H517 Manning, R. D., Jr., H2375 Männistö, P. T., E758 Manor, D., H2162, H2125 Mantero, G., H391 Mantey, S. A., G605, G739 Mantle, D., E288 Maouyo, D., E349, G251 Marala, R. B., H271 Marano, C. W., F315 Marchetti, J., F1053 Mårdh, S., G82 Maréchal, G., C513 Marfella, R., E1167 Marín, J. J. G., E368 Margana, R. K., L481 Margulies, K. B., F455 Maric, M., G404 Marie, V., E1039 Mariencheck, W. I., L491 Marin, J. J. G., G685, G1051 Marino, A. A., R1013 Markandu, N. D., F718 Markewitz, B. A., L192 Markovich, D., F626 Maroni, B. J., E668 Marschall, H. U., G700 Marsden, P. A., F1 Marshall, J., L615 Marshall, W. S., R963 Marsolais, M., F595 Martel, J., F1062 Martell, J., E949 Martínez, M. V., G459 Martínez, V., G207 Marthan, R., L966 Martial, S., F1218 Martin, P. J., H384, H1939 Martin, R. J., R874 Martin, S. L., R1507 Martin, S. M., R919 Martinez, A., C747, E28 Martinez-Zaguilan, R., F671 Martins, J. B., H2024 Martins, M. A., L781 Marty, E., H404 Marumo, F., C1546, F1046, H162 Marunaka, Y., C762, F64 Maruno, K., L1047 Massaeli, H., H1927 Massion, P. P., L85 Massry, S. G., F330 Mastrofrancesco, B., C669 Masud, T., E668 Masuda, T., L284 Matalon, S., C1148, G988 Mateo, R. B., C669 Mateo, Z., H848 Matern, S., G700

Mathews, M. S., F710

#### **AUTHOR INDEX TO VOLUME 268**

Mathews, P. M., C1207 Mathiasen, J. R., R1034 Maton, P. N., G739 Matot, I., H653 Matschinsky, F. M., E775 Matsubara, M., F1 Matsuda, Y., E428 Matsui, H., C252, L846, R21 Matsui, R., L56 Matsukawa, K., R1078 Matsumoto, H., C458 Matsumoto, M., H1249, H1418 Matsumoto, Y., E1070 Matsuo, M., G200 Matsuse, T., L846 Matsutani, A., E391 Matthews, D. E., E501 Matthews, M. L., E159 Matthews, S. G., E1096 Mattiazzi, A., H703 Mattingly, M. T., H921 Mattson, D. L., H1343, R317, R796 Matuschak, G. M., G311 Maunsbach, A. B., F1023 Mayer, D., L519 Mayer, K., H2252 Mayerhofer, C., C36 Mayr, G. W., C1485 Mayr, M., H1821 Mazer, C. D., H879 Mazzone, T., C1033 McAllister, K., L519 McAllister, R. M., H330, H1428 McAlroy, H. L., C823 McCabe, R. D., R825 McClellan, G., H1621 McClellan, J. L., R78, R480 McCollister, S., H1343, R658 McCoy, D. E., C1520 McCullagh, K. J. A., R884 McCullough, A. J., E789, E910 McDermott, P. J., H2495 McDonald, D. M., L263 McDonald, F. J., C1157 McDonald, R. B., R931 McElroy, M. C., L181 McEwen, B. S., E168 McGiff, J. C., F561 McGloin, A., E917 McGowan-Jordan, J., L666 McGrogan, I., L407 McGuinness, O. P., E92 McHugh, N. A., H2569 McIntosh, C. H. S., E645 McIntyre, R. C., Jr., L1029 McKay, M. K., H1139, H1856 McKean, M., C1395 McKeever, K. H., R1040 McKinney, L. C., C210 McKinnon, W., C580 McKnight, G. W., G134 McLachlan, J. B., L576 McLaughlin, P. J., R942 McMillin, J. B., H2505 McMurtry, I. F., H288 McNamara, C. A., C1141, C1259 McNeill, J. R., H1 McNicholas, C. M., F211 McNulty, P. H., E48, H364 McPherson, K. L., H1122 McQueston, J. A., H288 McTigue, D. M., G1 McWeeny, O. J., H1343 Mebazaa, A., H250

Meda, P., C611 Meddings, J. B., G260 Médina, C., R1327 Meeker, L. D., R1374 Megyesi, J., F664 Mehlhorn, U., H178 Mehta, J. L., H1015 Mehta, S., F754, G260 Meier, P. J., G18, G797 Meintjes, A. F., H1577 Meiss, R. A., C1267 Meissner, A., H100 Meister, J.-J., H1540 Melin, J. A., H1265 Melnick, S. B., H2336 Mélot, C., H817 Menard, C. R., R498 Menconi, M. J., G361 Mendel, V. E., R1 Mendenhall, L. A., E375 Meneton, P., F1053 Meng, Q. C., L95, L328 Meng, X., L1029 Mennone, A., C1186 Menon, V., C1369, C1375 Mérat, P., R253 Mercer, D. W., C1252 Mercer, J. B., R1257, R1266 Merkle, H., H1891 Merlet-Benichou, C., F634 Merlin, D., C1503 Merrill, D. C., H1343 Merrill, G. F., H2569 Merten, M., C1241 Merval, R., H2288 Meschia, G., E705 Messent, M., L509 Metwally, A. A., H39 Metwally, N., G772 Metz, G., H1847 Metzger, G., R1111 Meydani, M., R208 Meyer, J. H., G925 Meyer, J. M., F1198 Meyer, T. W., F82 Meyers, D. S., E678 Meyrick, B., L239 Michael, J. R., L192 Michael, L. H., H499 Michaels, D. C., H1181 Michel, F., G522 Michel, M. C., R192 Michel, T., H1293 Micheletti, R., H1702 Michener, S. R., H345 Mickelson, J. R., C1381 Middleton, P. G., C297 Midelfart, A., R963 Mier, R. A., H490 Mierson, S., S21 Mies, F., C557 Mifflin, S. W., H1343, R736 Migliorini, A., H1829 Mihailescu, L. S., H1593 Mikawa, K., L221 Miki, K., H1343, R583 Mikines, K. J., R72 Mildenberger, S., F899 Miles, J., E595 Miletich, R. S., R1491 Millán, I., G459 Miller, A. D., R1381 Miller, D. C., H2553 Miller, D. M., G872

Miller, D. S., F46

Miller, R. J., C829 Miller, R. T., C101 Miller, S. B., F128 Miller, V. M., H345 Miller, H. A., III, H265 Milley, J. R., E1114 Millgram, P., C1354 Ming, M., R105 Ming, Z., H2440 Minson, J., R909 Mirand, P. P., E328 Mitaka, C., H2017 Mitch, W. E., C1395 Mitchell, K. D., F821 Miyagi, Y., C1332 Miyamae, M., H1149 Miyasaka, M., H2175 Miyashiro, J. K., H895 Miyauchi, Y., G47 Miyawaki, T., R909 Miyazaki, C., G849 Mizelle, H. L., R375, R395 Mizisin, A. P., H740 Mizuno, R., H2246 Modesti, P. A., H1829 Moe, A. J., C755, C1321 Moerings, E. P. C. M., E974 Moeslinger, T., S2 Mohamed, M.-U., H1077 Mohapatra, N. K., G631 Mohaupt, M. G., F770 Moizo, L., G889 Molinari, C., R1464 Molitoris, B. A., F829 Mombouli, J.-V., H865 Mommessin, J. I., H441 Monaco, J. A., L546 Moncada, S., G895 Monda, M., R1533 Monte, M. J., G1051 Montgomery, J. A., E446 Montrose, M. H., L801 Moon, M. R., H2553 Moore, A. M., L78, L455 Moore, E. E., G397, G471 Moore, F. A., G397, G471 Moore, L. C., F163, F251 Moore, N., H794 Moore, N. G., E159 Moore, P. A., R58 Moore, S. F., H458 Morad, M., H1195 Moran, A., C210, C350 Moran, J. B., H1659 Moran, W. M., R1050 Moravec, C. S., H1875 Morelli, A., G968 Moreno, A. P., C356 Moresea, G., H1276 Morgan, C., E213 Morgan, J. P., H100 Mori, H., H1077, R1423 Mori, M., H1061 Morikawa, J., H1053 Morikawa, M., L284 Morimoto, N., L166 Morimoto, S., C21 Morimoto, T., C308 Morin, F. C., III, H1483 Morisset, J., E349, G251, G1043 Moriyama, M., E1184 Moriyama, T., F1102 Morley, G. E., F569 Morris, M., R278 Morris, S., C1104

Morrison, A. R., F1177 Morrison, G. H., C1133 Mortimer, B. C., G709 Morton, B., L519 Moseley, P. L., R28 Moseley, R. H., G480 Mosher, M. D., R1117 Mosoni, L., E328 Moss, S., F754 Motais, R., C434 Motel, V., F793 Mott, G. E., E889 Mottino, G., C1126 Moukarbel, N., E298 Mourelle, M., G895 Mourey, M. S., R536 Moxley, R. T., III, E67 Mu, X., C1418 Mueckler, M., C30 Muhs, A., H1462 Muir, J. K., H68 Mukaddam-Daher, S., R1411 Mukherjee, R., H836, H2104 Mulay, S., F416 Mullen, J., C604 Muller, A., H1510 Muller, B., H1223 Müller-Preuss, P., R1310 Mullin, J. M., F315 Mullins, J. J., F821 Mundel, P., F885 Mundel, T., H1765 Munkonge, F. M., C297 Munoz, C. F., G311 Muñoz, N. M., L446, L519 Murata, K., H2084 Murata, S., H512 Murer, H., F309, F626, F784, F1017, F1062 Murphy, R. A., C1425 Murray, M. J., E433 Murthy, K. S., C171 Murthy, M., C138 Mustafa, S. J., H271 Muto, H., G933 Muto, S., F490 Myers, A. C., L879 Myers, J., G868 Myers, P. R., H955

#### N

Nachshon, S., E428 Nadel, E. R., R414 Nadel, J. A., L85, L263 Nadler, J., E100 Nadon, N., E213 Naeije, R., H817 Nagai, A., L56 Nagano, M., G431 Nagase, T., L846 Nagata, M., H162 Nagaya, K., H1343, R583, R1289 Nagura, T., H2017 Najjar, S., F651 Naka, Y., H2056 Nakahari, T., F64 Nakaike, R., H1966 Nakamitsu, S., H1343, R583, R1289 Nakamura, I., R1196, R1423 Nakamura, K., C958, R528 Nakanishi, K., R317

Nakano, S., E531

Nakao, A., F385

Nakao, M., H336 Nakayama, D. K., L862 Nakazaki, M., E185 Nakazawa, H., H1077 Naldoni, A., H1829 Nally, J. V., Jr., F302 Namba, T., H1061 Nankervis, C. A., G949 Nanthakumar, N. N., G139 Napier, L. D., H848 Napoli, R., E248 Narendran, A., L789 Naruse, M., F20 Nasa, Y., H2384 Nassar, C. F., G695 Natali, A., E1 Natanson, C., H692, H1634 Natarajan, R., E100 Nath, K. A., C227, L321 Nathanson, M. H., C1186 Nattel, S., H1992 Nauck, M. A., E949 Navar, L. G., F876 Naveh-Many, T., F1017 Nawrocki, A. R., L957 Neal, D., E521 Neal, D. W., E194 Nebigil, C. G., F122 Necheles, J., L957 Neckel, M., F839, H2183 Nedergaard, M., R506 Nee, J. J., C985 Neely, A., C732 Neely, C. F., H653, L1036 Neill, J. D., E145 Nelson, G. H., H512 Nelson, M. T., C799 Nelson, S., L991 Nelson, S. H., H1694 Neri Serneri, G. G., H1829 Nestler, J. R., R889 Neufer, P. D., E866 Neumann, R. D., R1491 Ngo, E. O., C227 Nguyen, H. N., G700 Nguyen, J., H653 Nguyen, L. S., R1060 Nguyen, T. D., G215 Nicholls, M. G., R201 Nicolaïdis, S., R1401 Nicolaysen, G., H112 Niederau, C., G592 Nielsen, S., F1023 Nielsen, V. G., G988 Nigam, S. K., F1211 Nijland, M. J. M., R358 Nikinmaa, M., H1343, R590 Nikolic, S. D., H550, H2553 Nilsson, Å., G732 Nilsson, G. E., R1224 Ninomiya, H., L424 Ninomiya, I., R1078 Ninomiya, Y., R1019 Nishikawa, M., G849, L41 Nishimura, J., C1332 Nishina, M., H856 Nishioka, T., H2544 Nishiura, N., R1078 Nisyrios, V., G1004 Nixon, J. C., H125 Noble, E. G., C1387 Nóbrega, A. C. L., H1577 Noda-Heiny, H., C1195 Noël, J., C283 Nogami, H., E262

Nogee, L. M., L647 Noguchi, C. T., H2003 Noguchi, T., F1102 Noland, T. D., F931 Noll, T., H1462 Nonoguchi, H., F1046 Noonan, F., G908 Norbis, F., F626 Nord, E. P., C376 Nordin, C., H2440 Norgren, R., H1343, R676 Norton, G. R., H1096 Nossaman, B. D., L302, L532 Nowak, G., C1053 Nowicki, P. T., G949 Nowicki, S., F1087 Nuijens, J. H., H1352 Numaguchi, K., H1966 Nurjhan, N., E652 Nusrat, A., C472 Nussberger, J., H2267 Nustede, R., E949 Nutter, L. M., C227 Nuwayhid, B., R1411 Ny, L., G59

0 Oates, P. S., G1025 Oberleithner, H., S26 Obiako, B., H1862 Obih, J. C., H1343, R723 Obled, C., E328 O'Brodovich, H. M., L762 O'Connell, B. C., G1074 O'Connell, D. P., F1185 O'Donnell, C. P., H1106 O'Donnell, D. C., H1422 O'Donnell, J. M., G410 O'Donnell, M. E., C747, C1067 Ogawa, S., C1104, H1249 Ogawa, Y., C21 Ogilvie, R. W., H1174 Ogino, R., H856 Oh, P., H48 Ohbu, K., R231 Ohhashi, T., H2246 Ohishi, K., F876 Ohkuwa, T., E980 Ohning, G., G548 Ohning, G. V., G586 Ohta, Y., H162 Ohtsuka, M., G200 Ohtsuki, T., H1249, H1418 Ohuchi, T., G997 Oka, Y., F385 Okada, K., H1021 Okada, T., H2358 Okazaki, M., H1006 Okinaga, S., L399 Olcese, R., C732 O'Leary, D. S., H980 Olichon-Berthe, C., E604 Olinger, G. N., H1165 Olive, P., L832 Oliver, M. R., G764 Oliveras, D. M., E55, E820 Oliveras, J., H233 Olmos, L., H865 Olson, K. R., H1814 Olson, M. E., S49 Olszewski, M. A., L950 Omata, K., F1148 Omer, S., F416

O'Neill, R., G451

Oparil, S., L95, L328 Opgenorth, T. J., R375, R395 Orimo, H., L846 Orlowski, J., F710 O'Rourke, B., H506 O'Rourke, D. A., F423 Ørskov, C., E949 Orton, E. C., H1133 Osbaldeston, N. J., E288 Osborn, J. W., R1343 Osei, S. Y., H2418 Östenson, C.-G., E1046 Oster, L., R1394 Osterheld, M.-C., H2267 Otsuki, M., E531 Oudit, G. Y., R1273 Oudot, F., H308 Overbeck, H. W., H767 Overholt, J. L., C636 Owen, R. L., L584 Owens, G. K., C1141, C1259 Owyang, C., G146, G539, G1012 Oyama, K., E28 Ozawa, T., L123 Ozima, Y., R1423

Pacioretty, L. M., H1258, H2513 Padbury, J. F., E28 Padua, R. R., H1927 Pagano, P. J., H2274 Page, W. V., F710 Pagel, P. S., H720 Pagtalunan, M. E., F82 Paik, C. H., R1491 Paillard, M., F1224 Pajaro, O. E., H550 Pallone, T., F1023 Palmer, L. G., C389, F480 Palmon, L., H1304 Pampori, N. A., E439 Pan, H.-L., H448, H526 Pan, M., G578 Panagopoulos, V., G389 Pandol, S. J., G900 Panek, R. B., C127 Pang, S. C., H1869 Panzali, A., H391 Paoletti, P., H1829 Paolisso, G., E1167 Papayianni, A., F1 Pappano, A. J., H1027 Pappas, T. C., C952 Paradiso, A. M., C425, L1021 Paramelle, B., E965 Parati, G., H1606 Pardo, F., E248 Parekh, N., F967 Parfenova, H., H1884, H2048 Park, C., H1702 Park, C. R., R299 Park, J.-S., R1500 Park, K., C647 Park, S.-K., E685 Park, T. H., H1740 Park, T. S., H871 Park, Y.-Y., R1500 Parker, J. C., C660 Parker, J. L., H955 Parkes, D. G., H2574 Parkos, C. A., C472 Parks, D. A., G988 Parks, W. C., L491 Parnet, P., R1327 Parrillo, J. E., H713, H692

Parrish, M. B., G161 Parsons, W. R., E1123 Pasini, E., H391 Pasmantier, R., C376 Pastor, C. M., G177 Pastor-Anglada, M., E368, H1343, R598 Pastorino, J. G., C676 Pasumarthi, K. B. S., H1927 Pasyk, E., H138 Patel, T., G613 Path, G., H1891 Patterson, C. E., L926 Patterson, J. L., H2487 Paul, I., E336 Paulais, M., F496 Paulson, O. B., E1161 Paultre, C., R382 Pavalko, F. M., C563 Payne, C. J., R423 Payne, J., R1374 Payne, N., F754 Payne, W. D., H155 Pazianas, M., F447 Peden, D. B., L902 Pederson, R. A., E645 Pedina, J., F839, H2183 Pedotti, A., H1606 Peeters, G. A., H1757 Pekary, A. E., H1343, R808 Pellissier, B., C434 Penagini, R., G128, G925 Pence, R. A., R236 Penev, P. D., R293 Perdue, G. S., R150 Perego, C., F626 Perez-Reyes, E., F525 Periasamy, M., C252 Perini, A., L781 Péronnet, F., R50 Perramon, A., R253 Perreault, T., L607 Perrone, M. H., C1301 Perrone, R. D., F398 Perrott, M. H., H2232 Persson, P. B., H621 Peskar, B. M., G276 Pesman, G. J., E551 Pessayre, D., G107 Peters, M. J., C331 Peters-Golden, M., L294 Peterson, L. N., F145 Peterson, O., F1004 Petit, F., E219 Petkova, D., H759 Petrides, A. S., E1031 Philipps, A. F., R266 Philipson, K. D., C1126 Phillips, P. G., L789 Phillips, S. F., G95 Phuyal, J. L., E752 Pickard, J. D., H213 Pierce, G. N., H1927 Pierce, R. A., L491 Pierotti, D. J., C527 Pietarinen, P., L71 Pigon, J., E1046 Pigott, J. D., H1335 Pike, M. M., H2505 Pilewski, J. M., L657 Pilot, M.-A., G650 Pilowsky, P., R909 Pinheiro, J. M. B., L465 Pinilla, J. M., R1442 Pinsky, D. J., C1104, H2056

Piper, H. M., H1531, H1462 Piraino, S., L615 Pison, C. M., E965 Pitchford, S., C936 Pitkänen, O. M., L762 Pitman, E. B., F163 Pitsillides, K. F., H1358 Pitt, B. R., L501, L862 Pittelkow, M. R., H921 Pittet, J.-F., L181 Pittman, Q. J., R919 Pladsen, P., L230 Planer, B. C., L674 Planus, E., C1062 Plassart, F., E298 Plata-Salamán, C. R., R1513 Plate, K. H., F240 Playford, R. J., F754 Plotnick, G. D., H1397 Ploug, T., E980 Ploutz-Snyder, L., C869 Podvrsan, B., G772 Poehlman, E. T., E1192 Poggetti, R. S., G471 Pohost, G. M., H2505 Poirée, J.-C., G41 Polk, D., E33 Polonsky, K. S., E21 Poltronieri, R., H7 Pond, S., L666 Poole, D. C., H1453 Poon, R., C846 Popoff, S. N., E312 Pories, W. J., E453 Porkka-Heiskanen, T., R1456 Porteous, D. J., C297 Porter, S., L832 Posner, B. I., E60 Posner, P., C278 Post, H., H2294 Post, J. A., H773 Post, M., L78, L136, L455, L729 Poston, L., C580 Pothoulakis, C., G487 Potts, J. L., E588 Potts, J. T., H1208, H1567 Pouchelet, M., C1062 Pouderoux, P., G320 Poupon, R., E298 Poutanen, V.-P., H1232 Pouysségur, J., C283 Powell, H. C., H740 Powell, J. R., H836 Powers, F. M., C1348 Powers, L., E446 Pradhan, T. K., G605 Prange, M., H2183 Prat, A. G., C1552 Pratley, R. E., E484 Preocanin, D., L407 Pressley, T. A., C1252 Preston, E., R1249 Preusen, S. E., L471 Price, M. P., C1157 Price, P. M., F664 Price, S. R., C1395, F1218 Pries, A. R., H25 Prince, G. A., L1006 Profitt, S. A., L647 Prpic, V., G90 Prugnaud, J., E328 Prussel, E., H935 Pryor, W. A., L699 Przekwas, J., F155 Pueblitz, S., L972

Putet, G., R253 Putman, C. T., E1007

#### Q

Qian, J.-M., G605 Qiu, Y.-Y., F461 Qu, Q. S., L558 Qually, J. M., H1549 Quayle, J. M., C799 Quesada, T., E897, R1442 Quezado, Z. M. N., H1634 Quigley, R., F847 Quillen, E. W., Jr., F296, R1411 Quinlan, W. M., L27 Quintero, E., G586 Qureshi, G. A., R520

#### R

Rabbani, S. A., E832 Rabe, K. F., L519 Rabkina, D., L589 Radda, G. K., C628 Raffestin, B., H828 Raffety, B. D., R1418 Rainsford, K. D., G161 Raivio, K. O., L71 Raizada, E., R223 Raizada, M. K., E384 Raj, J. U., H1586 Rajagopalan, S., H788 Rajaraman, S., G71 Rajasekaran, A. K., C308 Rajerison, R., F1141 Rajerison, R. M., F1053 Rajfer, J., H467 Ralston, N. V. C., L33 Ramasamy, R., H935 Ramm, G. A., G451 Ramos, S. I., F1185 Ramsammy, L., C376 Ramsay, D. J., R1069 Rangachari, P. K., S21, S75 Rankin, J. S., H550 Rannels, D. E., L161, L336, L885 Rannels, S. R., L885 Rantzau, C., E410 Rao, G. H., C138 Rao, K., L739 Rao, R. H., E873 Rasch, R., F82 Rascher, W., R192 Rasmussen, H., F13, F997, H202 Rasmussen, H. H., C366, H1838 Rasmussen, K., E636 Ratcliffe, P. J., C1362 Rattan, S., G443 Rattigan, S., E305, E797, R1217 Rau, G., G700 Raufaste, D., H404 Rauhala, P., E758 Raven, P. B., H1208, H1567 Ravichandran, L. V., H2216 Raya, T. E., H2092 Raymond, J. R., F122 Raz, M., L214 Ré, R. N., H1471 Read, V., E941 Reaich, D., E121 Rebich, S., H1071 Rechtoris, C., C1033 Rector, D. M., R324 Rector, T.S., H92

Reddix, R., G465 Reddy, S., C138 Redgrave, T. G., G709 Reenstra, W. W., C154, C886 Reeves, W. B., C1467 Regnier, L., F145 Regoli, D., G161 Reich, M. M., E159, E1077 Reichek, N., H1304 Reichner, J. S., C669 Reid, I. A., F296 Reid, J. L., H1122 Reider, M. W., E446 Reilly, J. M., H692 Reilly, S. L., R978 Reilly, T. M., H1352 Reis, D. J., R454 Reiser, P. J., C323 Remaury, A., E1135 Rembold, C. M., C1425, H74, H2466 Remesar, X., H1343, R598 Remick, D. G., L245 Remuzzi, A., F972 Ren, J., G772, G1037 Renaud, J. M., C1528 Renaud, W., C1241 Rendig, S. V., H448 Rendina, V., E248 Renehan, W. E., G780 Reneman, R. S., H909 Renfro, J. L., F135, H1343, R577 Rengasamy, A., H2216 Renlund, D. G., H1757 Rennard, S. I., L214, L230, L723 Rennke, H. G., F82 Rensberger, H. J., H377 Rentch, R., F754 Repine, J. E., L12 Reuben, M., F581 Reusch, H. P., C147 Revelly, J. P., H1106 Reviczky, A. L., E33 Rey, C., E298 Rhoden, K. J., L551 Riccio, A., E1089 Rich, T. L., C119 Richard, D., R14 Richard, V., H794 Richards, A. M., R201 Richards, E. M., C278, C700, E384 Richards, H. K., H213 Richardson, C. A., F273 Richardson, D., S66 Richardson, R. D., R1418 Richardson, R. S., H1453 Ridsdale, A. J., C1133 Riecken, E.-O., G725 Riegger, G., F39 Rifai, Z., E67 Rifas, L., F357 Riklis, S., L144 Rio, N., R1236 Ripper, J. L., G121 Risau, W., F240 Ritman, E. L., F404 Ritthaler, T., F39

Rivard, N., G251

Rivas, M., H802

Rizza, R., E595

Rizzo, A., H1954

Rivero, R. A., H1343, R820 Rivers, R. J., H1379

Robbins, R. A., L911 Roberts, A., R1394 Roberts, J. M., H1613 Roberts, T. P. L., R1143 Robertshaw, D., R1101 Robertson, G. L., R349 Robertson, T. P., H301 Robillard, J. E., F710, H1343 Robinson, C., E213 Robinson, N. E., L368, L950 Robotham, J. L., H1106 Robson, R. A., F227 Rocchiccioli, F., E652 Roche, S., G522 Rodenburg, J. M., H1628 Rodger, I., L957 Rodgers, G. P., H2003 Rodríguez-Martínez, M., R117 Rodríguez-Membrilla, A., G207 Rodriguez, E., H686 Rodriguez-Boulan, E., C308 Roeser, N. F., F110 Rogausch, H., R902 Rogers, Q. R., R1203 Rogers, R. C., G1 Rogers, S. A., F73, F128 Rogers, W. J., H1918 Rogiers, P., H1847 Rogus, E. M., E484 Rohrbach, M. S., L33 Roitstein, A., H1202 Rojas, C. J., C1301 Rojas, E., E336 Romberger, D. J., L214, L230 Romero, J. C., F404 Romijn, J. A., E813 Ronan, A. M., R1374 Ronco, P. M., F1164 Rongish, B. J., H811 Rooney, S. A., L683 Roos, F., G380 Rorke, E. A., C1215 Rose, E., H2157 Rose, J., H2294 Rose, R. W., R1217 Rosen, C. F., C846 Rosenberg, R. D., C856 Rosenblum, W. I., H512 Rosenfeld, C. R., E237 Rosenthal, G. J., G443 Rosner, M. R., L894 Ross, M. G., R358 Rosseau, S., L747 Rossetti, M., L966 Rossi, I., G459 Rossi, N. F., E467 Rossier, B. C., C1207 Rossignol, B., G1043 Rosskopf, D., C14 Roth, G. S., E941 Roth, J., R514 Roudbaraki, M. M., E1215 Rounds, S., L666 Rousseau, E., L1057 Rousselot, M., C1277 Rovetto, M., H1659 Rowe, M., C1267 Roy, R. R., C527 Roy, T. A., E237 Rubbo, H., L697 Rubin, L. J., C259 Rubinstein, I., L911 Ruff, R. L., C317 Ruffini, L., C376 Ruggeri, P., R1464

Ruiz, O. S., F461
Ruiz-Meana, M., H233
Ruiz-Montasell, B., E368
Rumbaut, R. E., H1856
Runyan, K. R., R156
Russell, B., C1045
Russell, J., F854
Russell, J. A., H1483
Russell, R. R., III, H441
Russo, L. M., F315
Russo, R., H2352
Rutledge, J. C., H1982, R1060
Ryan, A. J., R28
Ryan, A. M., G380
Ryan, S. M., H359

#### 8

Saadé, N. E., G695 Sabol, S. L., G346 Sabolić, I., F398, G663 Sacca, L., E55 Saccà, L., E248 Sachinidis, A., C14 Sachs, G., F581 Sackin, H., C389 Saeki, A., H2544 Saeki, Y., R859 Sáez, J. C., C1186 Safirstein, R. L., F664 Sagawa, S., H1343, R583, R1289 Sager, B. K., E1123 Saggi, S., F664 Said, S. I., L1047 Saito, T., H1021 Saitta, A., H1412 Sakaguchi, H., C496 Sakairi, Y., F490, F931 Salahudeen, A. K., F30 Salazar, F. J., R1442 Saldiva, P. H. N., L781 Saleh, T. M., H1343, R786 Salem, M. R., H39 Salmons, S., E277 Salzman, A. L., G361 Salzman, E. W., C856 Samaras, S. E., E1057 Sampson, B., F718 Samson, R. A., H2024 Sánchez, M., E174, E360 Sandberg, S. M., F657 Sandefur, S., L491 Sandeman, D. D., H147 Sanders, K. M., C619, G823 Sanderson, M. J., C1537 Sandler, H., R1040 Sándor, N., G242 Sands, J. M., F1218 Sanguinetti, M. C., H1757 Sanna, G., E1 Sansone, J. C., Jr., H330 Santiago, J. A., H2418 Santilli, S. M., H155 Santini, F., E572 Santos, G. F., C886 Santos, J., G286, G895 Santucci, L., G968 Sanz, E., H233 Saperas, E., G286, G895 Sapru, H. N., R851 Sarda, I. R., H1869 Sarel, I., R1484 Sarelius, I. H., H1215 Sarembock, I. J., C1141 Sariban-Sohraby, S., C557

Sarna, S. K., G530 Sarvazyan, N., H1115 Sasaki, H., L284, L399 Sasaki, M., R528 Sasaki, S., C1546 Sasayama, S., H1149 Sassani, J. W., R942 Sastrasinh, M., C1227 Sastrasinh, S., C1227 Satkus, S. A., L101, L935 Sato, K., R951 Satoh, H., H1239 Satoh, M., L399 Sauer, P. J. J., E789 Sauerwein, H. P., E813 Saul, J. P., H2232 Saulino, A., C636 Savineau, J.-P., L966 Savu, L., R536 Sawai, T., L284 Sawano, F., R859 Sawanobori, T., H2321 Sawin, L. L., R112, R117 Scalbert, E., H1947 Scalera, G., H1343, R676 Scales, W. E., H1343, R699, R896 Scandrett, A. L., F258 Schaad, N. C., H2267 Schackow, T. E., C993, C1002 Schadt, J. C., R171 Schaefer, S., H935 Schaeffer, P., H404 Schafer, A. I., H1158 Schairer, J. L., H2569 Schaphorst, K. L., L926 Schechter, A. N., H2003 Scheel, K. W., H2162, H2125 Schena, F., H7 Schiavetta, A. M., E858 Schiavi, S. C., L615 Schiebinger, R. J., E476 Schier, T., E107 Schindler, C., E630 Schlenker, E. H., H1343, R779 Schluter, J., C30, R997 Schmassmann, A., G276 Schmidt, E. V., G1025 Schmidt, G., F839, H2183 Schmidt-Nielsen, B., R1087 Schneider, E. G., R8 Schneiter, P., E630 Schnellmann, R. G., C1053 Schnermann, J., F948, F953, F960, F1164 Schnitzer, J. E., H48 Schoenbach, G., E546 Scholz, H., F39 Scholz, P. M., H1202 Scholz, T. D., H82 Schorn, T. W., H1343, R820 Schotanus, K., R989 Schotland, S., C1090 Schouten, V. J. A., H1510 Schrader, J., H351, H2460 Schramm, U., F46 Schreiner, G. F., F1177

Schreur, K. D., C339

Schroeder, R., F940

Schulz, R., H2294

Schulman, L. L., H1521

Schultz, J. E. J., H2157

Schulzke, J.-D., G725

Schumacker, P. T., L918

Schutz, Y., E1051, E1083

Schütze, I., H1343, R666 Schwab, A., S26 Schwall, R. H., G380 Schwartz, G. G., H1821 Schwartz, J., E623 Schwartz, J. B., H1441 Schwartz, M., L674, L839 Schwartz, M. W., R142 Schwartz, R. J., C918 Schwarz, M., L501 Schweickhardt, C., G663 Schweiger, U., R865 Schwiebert, E. M., C243, C1520 Schwöbel, J., F770 Scislo, T. J., H662 Scott, L., G90, R208 Scott, R. B., G764 Scott, S. M., G650 Scremin, O. U., R569, R1520 Scrimgeour, C. M., E121 Seals, D. R., R278 Sebastian, R. J., R142, R1209 Seear, M., S32 Seeger, W., H2252, L747, L753 Seeley, R. J., R299, R423, R676, R1418 Segal, A. S., F204 Segal, S. S., H336 Segar, J. L., H1343 Seidler, U., G496 Seifen, E., C1414 Seikaly, M. G., F266 Seip, R. L., E229 Seki, S., H1045 Sekizawa, K., L284, L399 Seller, H., R958 Selmanoff, M., E685 Semenkovich, C. F., E229 Semenza, G., G41 Sen, N., L108 Sener, A., C111 Senyk, O., C1148 Sergiel, J. P., H308 Sernia, C., R1319 Serradeil-Le Gal, C., H404 Serrano, M. A., G685, G1051 Serrurier, B., E328 Sethi, A. K., G530 Seul, K. H., R1129 Severson, D. L., H576 Shafer, S. L., R85 Shah, A. M., H2396 Shah, A. R., H871 Shaikh, A., C1164 Shaker, R., G772, G1037 Shaklee, C. L., L856 Shalmi, M., F1229 Shankar, V.S., F447 Shanmugam, S., F922 Shapiro, B. H., E439 Shapiro, E. P., H1918 Shapiro, J. I., R889 Sharara, A. I., G90 Share, L., R951 Sharkey, K. A., H584 Sharma, N. B., R1171 Sharma, N. R., H962 Sharon, N., G553 Shaver, A., E60 Shaw, D. W., G389 Shea. M., H569 Shea-Donohue, T., G823 Sheean, L. A., H1343, R614 Sheets, M. F., C993 Shen, J.-B., H1027

Shen, Y.-T., H781 Shepard, B., L1052 Shepherd, P. R., E956 Sheppard, D., L85 Sheriff, D. D., H980 Sherman, J. S., L856 Sherry, A. M., C191 Sherwin, R. S., E55 Shetty, S., L972 Sheu, J.-N., F847 Shi, H., H1343, R683 Shi, P., F1198 Shi, X., H1567 Shi, X.-Y., H1006 Shibabe, S., C496 Shibamoto, T., R859 Shibata, E. F., H2024 Shibata, M., H2048 Shimada, K., H1021 Shimizu, R. T., C1259 Shimokawa, H., H1966 Shimomura, K., G200 Shimoni, Y., H576 Shin, S. H., H1869 Shinozaki, Y., H1077 Shiota, M., E1184 Shirai, M., R1078 Shiraki, K., H1343, R583, R1289 Shirasaki, H., C331 Shirohara, H., E531 Shkolnik, A., R1101 Shmeeda, H., H759 Shnier, C. B., H879 Shore, A. C., H147 Short, T. H., F315 Shpun, S., F1109 Shrier, I., H371 Shuck, M. E., C1173, F1132 Shuttleworth, C. W. R., C619 Sibbald, J. R., R1336 Sibley, D. R., F1185 Sideman, S., H633 Sidhu, A., F1009 Sidorowicz, H. E., R1034 Sieck, G. C., L166 Siegel, N., F651 Siegfried, J. M., L1012 Siegl, P. K. S., H1343, R820 Siegmund, B., H1531 Siess, W., C36 Siffert, W., C14 Siga, E., F1070 Silbernagl, S., F899, S26 Silen, W., G933 Sill, H. W., H535 Sillence, M. N., E159, E1077 Silny, J., G700 Silver, J., F1017 Silver, J. M., H39 Silver, R. B., F480 Silverman, H. S., H2396 Simmons, J. C., R1137 Simmons, W. W., H1293 Simon, B., F447 Simon, M., F240 Simons, M., C856 Simonson, M. S., F760 Simpson, L. G., L601 Simula, M. E., G389 Singer, D. R. J., F718 Singer, J. H., H1343, R683 Singer, W. D., C101 Singh-Kaw, P., L1012 Sinha, A. K., H117 Siniaia, M. S., R1381

Sinkin, R. A., L826 Sipkema, P., H945, H2162, H2531 Sisson, J. H., L596, L723, L911 Sitsapesan, R., C1235 Siu, C. O., H1918 Sizeland, P. C. B., F227 Sjöberg, B. J., H476 Sjogren, R., G823 Sjöquist, M., H1343, R634 Skelton, M. M., H1343, R796 Skelton, M. S., R1121 Skidmore, R., R92 Skinner, K. A., G988 Slaaf, D. W., H909 Sladek, C. D., R1034 Slatopolsky, E., F746 Slavik, K. J., H1037 Sleph, P., H242 Slightom, J. L., F1132 Slinker, B. K., H170 Slobodyansky, E., F279 Smerling, A. J., H2056 Smith, A. E., L615 Smith, B. L., F1023 Smith, C. B., E735, R549 Smith, C. H., C755 Smith, D. W., R1336 Smith, E. W., R1121 Smith, F. M., R403 Smith, J. P., R135 Smith, L. A., R164 Smith, M. M., C985 Smith, P. G., L999 Smith, R. J., E987 Smith, S. B., E858 Smith, S. E., R1456 Smith, S. K., E288 Smith, S. N., C297 Smith, T. J., C382 Smith, T. W., H1293 Smith, W. L., F1198 Smith, W. M., H2336 Smitka, C. W., R78 Smogorzewski, M., F330 Smolka, A. J., F363 Smout, A., G424 Snellen, H., F175 Sneyd, J., C1537 Snow, N. D., G90 Snyder, G. K., R889 Snyder, J. W., C676 Snyder, P. M., C1157 Sobel, B. E., C1195 Sobhani, I., G889 Södersten, P., R520 Sokoloff, L., R445 Solares, J., H233 Solaro, R. J., C323, C1348 Soler-Soler, J., H233 Soloviev, M., E880 Solway, J., L894, L957 Somero, G. N., R1003 Sonksen, P. H., E766 Sonne, B., E636 Sonnenblick, E. H., H1702 Sonti, G., R1513 Sorenson, C. M., F73 Sormaz, L., L407 Sorribas, V., F626 Sotelo, A. I., E745 Soutani, M., H1959 Spannhake, E. W., L424 Spapen, H., H1847 Spear, M. L., E1123

Spieckermann, P. G., S2 Spielman, W. S., C1520, F1198 Spinale, F. G., H836, H2104, H2426 Spitz, J., G374 Spitzer, A. R., L108 Spotnitz, W. D., H1555 Spray, D. C., C356 Sprecher, U., H432 Spriestersbach, R., L747 Spriet, L. L., E127, E1007 Spring, K. R., F53 Spungen, A. M., H2239 Spurgeon, H. A., H916, H2396 Spurney, R. F., F122 Spurzem, J. R., L214, L723 Squadrito, F., H1412 Squadrito, G., H1412 Squadrito, G. L., L699 Sreedharan, S. P., L584 Srere, H. K., R1507 Stacy, G. P., Jr., H1803 Stadler, J., G183 Stahl, G. L., H448, H2114 Stahl, R. A. K., F940 Stallone, J. N., R40 Stange, G., F626 Stanley, W. C., H879 Stanton, B. A., C1520, F347, F854 Staples, J. F., H1343, R816 Stark, W. W., Jr., L862 Staron, R., C869 Starr, F., F581 Starr, R. G., H1593 Stasek, J. E., L926 Statt, M., E422 Stauber, D. J., C1090 Steel, D. M., C297 Stefani, E., C732 Steffens, A. B., R72, R1163 Steiger, A., E107 Steil, G. M., E712 Stein, B., G539 Stein, H. M., E28 Steinberg, S., H2211 Steinhorn, R. H., H1483 Steinsland, O. S., H1694 Ste-Marie, L., E446 Stenberg, D., R1456 Stephens, N., H670 Stephens, N. L., L739 Stephenson, J. L., F680, F693, F698 Stepniakowski, K., R562 Stergiopulos, N., H1540 Stern, D. M., C1104, H2056 Stern, M. D., H916 Sterni, L. M., L801 Stevens, B. R., G578 Stevens, J., H2252 Stevens, R. B., H155 Stevenson, V., G539 Stine, L. C., L214 Stingo, A. J., F455 Stinson-Fisher, C., L152 Stock, G., H1343, R666 Stoclet, J.-C., H1223 Stone, R. T., E858 Stoner, L. C., F569 Storey, K. B., R1386 Stouthard, J. M. L., E813 Stowe, N. T., F302 Strack, A. M., R142, R183,

Strawbridge, A. B., C1512 Strick, D. M., F404 Strieter, R. M., L856 Strosser, M.-T., C413 Strowski, M., E40 Stull, J. T., H2466 Stump, C. S., C918 Stumpf, H., H1343, R666 Stumpf, P., G496 Stupfel, M., R253 Sturis, J., E21 Stutts, M. J., C425 Su, D. H. C., C472 Sudo, H., H2384 Suen, H.-C., L589 Suga, H., H1061, H2544 Sugano, S., L63 Sugano, T., E1184 Sugden, M. C., E722 Suggs, W. K., C70 Sui, Z., G772 Suleiman, J., C838 Sullo, A., R1533 Sumimoto, H., H1966 Summer, W. R., L991 Summy-Long, J. Y., H1343, R651 Sumners, C., C278, C700, E384 Sun, D., C747 Sun, Q.-J., R909 Sun, W. M., G424, G925 Sun, Y., E735, H476, R549 Sundin, D. P., F829 Sundin, L. I., R771, R1224 Sunose, H., L361 Suresh, M. S., H1694 Susini, C., E343 Sussman-Turner, C., F135 Sutliff, V. E., G605 Suttorp, N., L753 Suzuki, K., H856, H1418 Suzuki, M., L361 Suzuki, S., L983, R909 Suzuki, T., H2084 Suzuki, Y., G1066, H1959 Swain, M. G., G404 Swanson, P., H1343, R577 Swanson, S. C., E375 Sweep, C. G. J. F., E551 Sweet, I. R., E775 Sweeten, T., H1195 Swoap, S. J., R33 Szelényi, Z., R480 Szpak-Glasman, M., E336 Szwarc, R. S., H1490

T

Tabak, L. A., G1074
Tabei, K., F490
Taché, Y., G548, G943
Tachibana, I., E531
Tachibana, T., E262
Tada, K., F410, G997
Taegtmeyer, H., H441
Tagliaferro, A. R., R1374
Taguchi, S., R1423
Taha, A. M., G695
Taira, T., R1456
Tait, S. M., G749
Takada, M., C218
Takapi, K., L221
Takahashi, E., H2561
Takahashi, H., L123
Takahashi, N., F410, F1148

Takahashi, T., H2084, R528 Takaki, M., H1061 Takakura, Y., G849 Takamata, A., R414 Takano, K., E558 Takasago, T., H2544 Takasaka, T., L361 Takase, S., G1066 Takata, S., F1 Takayama, Y., H1788 Takayama-Arita, K., C218 Take, S., R1406 Takeda, S., F808 Takemoto, F., F385 Takeo, S., H2384 Takeshige, K., H1966 Takeshita, A., H544, H1966 Takeuchi, A., F13 Talamantes, F., E745 Tallant, B., H1304 Tamaoki, J., C1342 Tan, D. T. M., G764 Tan, S., G988 Tan, S.-S., F363 Tanahashi, H., H2384 Tanaka, E., H1077 Tanaka, H., E185, F330 Tanaka, M., H162, H1149 Tang, M.-J., F862 Tang, S.-S., F435 Tang, W., E384 Tangelder, G. J., H909 Tanguay, R. M., C1387 Taniguchi, N., H1418 Tannenbaum, S. R., E360 Tanner, M. A., H955 Tanonaka, K., H2384 Tanswell, A. K., L78, L136, L374, L455, L729, L762 Tappy, L., E630 Tapscott, E. B., E866 Tarbell, J. M., H535 Tarjan, E., R1526 Tarnawski, A., G276 Tarrade, T., G889 Tarumi, C., E194, E521 Tashiro, S., G47 Tateishi, J., H2068 Tateishi, N., H1959 Tauber, A. I., H2274 Tavernier, G., E1135 Taylor, A. E., H1954, L526 Taylor, C. R., R1101 Taylor, L. K., H1803 Taylor, R. N., H1613 Taylor, T. W., H2544 Tedgui, A., H2288 Teerlink, J. R., H432 Temiz, A., H260 Temler, E., E630 Tempelman, R. J., E15 Ten Eick, R. E., C993, C1002 Tenenhouse, H. S., F1062 Ten Hagen, K. G., G1074 Tennenberg, S. D., G843 Terada, H., H1239 Terada, Y., F1046 Teramoto, A., E558 Terjung, R. L., H1174 Terrell, M. L., H1343, R651 Terry-Nathan, V. R., R1203 Terzi, F., F793 Tetsuka, T., F808

Teulon, J., F496

#### **AUTHOR INDEX TO VOLUME 268**

Tewarson, R. P., F680, F693, F698
F698
Thakore, K. N., G71
Thames, M. D., H218
Thipakorn, B., R468
Thomas, M. E., F1177
Thomason, D. B., C1369, C1375
Thompson, D. P., C1173
Thompson, J. C., E1199, G71
Thompson, J. M., R278
Thompson, M. M., C1259
Thompson, W. J., C1104, H1862
Thomson, B. C., E1077
Thomson, S. C., F1004
Thorburn, G. D., E623
Thorens, B., C611
Thorin-Trescases, N., H1122,

R1394 Thornton, C., E422 Thornton, S. N., R1401 Thrasher, T. N., R1069 Throckmorton, D. C., F13, F997 Thuillez, C., H794 Thurlbeck, W. M., L56 Thurston, G., H316 Tian, Y., E135 Ticozzi, C., F793 Tienari, J., S40 Tiengo, A., E1089 Tigyi, G., H2048 Tilders, F. J. H., R989 Tillotson, L., G1025 Tipton, K. D., E514 Tiruppathi, C., L465 Tiwari-Woodruff, S. K., C1284 Toback, F. G., F604 Tobias, A. H., H170 Tobler, I., R1365 Tod, M. L., C259, H1422 Toh, B.-H., F363 Tøien, Ø., R1257, R1266 Tokui, T., L999 Tom, K., E668 Tomanek, R. J., H419, H811 Tomares, S. M., L801 Tomaselli, G. F., H506 Tomita, K., F1046 Tomoi, M., G200 Tooke, J. E., H147 Tornheim, K., H2274 Torre-Amione, G., H517 Torry, R. J., H419, H811 Touitou, Y., R1111 Toutain, P. L., R1236 Townsend, C. M., Jr., E1199,

G71 Townsley, M. I., H1954 Toyozaki, T., H162 Tozzo, E., E956 Trachsel, L., E107 Trachte, G. J., C978 Tran Ba Huy, P., L390 Tran-Patterson, R., G872 Traub, O., H1973 Travagli, R. A., G292 Treijtel, B. W., H987 Triandafillou, J., R98 Triedman, J. K., H2232 Trifunovic, B., H1096 Troyanovskaya, M., F220 Truett, G. E., E15 Tsai, T. D., C1173 Tsan, M.-F., L1052 Tschesche, H., H1352 Tse, J., H686, H1202

Tse, S., R1374 Tso. P., G568, H2175 Tsumoto, S., H1781 Tsunoda, Y., H2017 Tsutamoto, T., H2281 Tu, T. Y., L390 Tucker, A., H1133 Tuder, R., G471 Tulenko, T. N., H2522 Tulip, J. R., H670 Tuominen, R. K., E758 Turek, F. W., R293, R1456 Turner, A. G., R278 Turner, R. J., C350 Turner, S. T., R978 Turyn, D., E745 Tyler, W. J., R150 Tynan, T. M., H458

#### U

Uğurbil, K., H1891 Uchida, S., F385 Uchida, T., H2017 Uchida, Y., L424 Uchimura, D., R1406 Uchiyama, T., R1423 Ueda, N., F1102 Ueda, T., L636 Ueno, M., H1383 Uhal, B., L625 Ulich, T. R., L245 Ullian, M. E., H2009 Ulshen, M. H., G631 Uma, K. M., G242 Umeda, Y., G709 Umpleby, A. M., E766 Undem, B. J., L879 Unguez, G. A., C527 Ungureanu-Longrois, D., H1293 Unno, N., G361 Unthank, J. L., H125 Unwin, R. J., F234, F754, F1081 Upton, P., F754 Urban, J. H., R1456 Utian, W. H., C1215, H1343, R614 Uyesaka, N., H2003

# V Vacher, P., E1215

Vachon, P. H., G857

Vachvanichsanong, P., F1009 Val, V. M. F., H1343, R816 Valdez, I. H., R1491 Valenti, J. A., E48 Valentin, J.-P., R366 Valet, P., E1135 Valluy, M.-C., E328 Van Acker, B. A. C., F543 Van Bibber, R., H1973 Van den Aardweg, J. G., H2145 Vandenboom, R., C596 Vandenborne, K., C869 Van den Thillart G. E. E. J. M. R1163, R1178 Vanderbilt, J. N., L674 Vanderhoeft, P., H817 Van der Meer, M. J. M., E551 Van der Meulen, E. T., H1510 Van der Poll, T., E813 Vandorpe, D., F854 Van Driel, I. R., F363 Van Dyke, R. W., G480 Van Echteld, C. J. A., C1474 Van Ginneken, V., R1178

Van Hardeveld, C., H1510 Vanhoutte, P. M., H865 Vannier, C., L201 Vannucci, S. J., E693 Van Obberghen, E., E604 Vanoverschelde, J.-L. J., H1265 Van Raaij, M. T. M., R1163 Van Riper, D. A., H2466 Van Rooijen, N., R989 Van Steenwijk, R. P., H2145 Varga, L., G276 Vargas, F., E897 Varma, D. R., F416, H628 Vary, T. C., E491 Vatner, S. F., H781 Vaughn, P. R., E705 Veale, W. L., R919 Veenhof, C. H. N., E813 Velazquez, F. R., H749 Venkatachalam, M. A., F110 Venkatesh, V. C., L674 Vera, J. C., C1077 Verberne, A. J. M., H1343, R752 Vercellotti, G. M., L321 Vergara, P., G207 Verkleij, A. J., H773 Vermeil de Conchard, G., R536 Vernet, D., H467 Vernon, S. M., C1259 Verrazzo, G., E1167 Verri, T., F626 Vetter, H., C14 Vetter, V., H1195 Vetterlein, F., F839, H2183 Vexler, Z. S., R1143 Veys, T., L723 Vidt, D. G., F302 Vilar, J., F634 Villablanca, A. C., R1060 Villanueva, F. S., H1555 Vincent, J.-L., H1847 Virkki, L. V., H1343, R590 Virtanen, I., L71 Vis, M. A., H2531 Visser, T. J., E974 Vissing, J., E980, R72 Viviano, C. J., L683 Voelkel, N. F., L123 Vogel, R. A., H1397 Vogt, C., E1031 Vogt, J., E360 Volpe, M., H2352 Vorbroker, D. K., L647 Vore, M., G11 Vranckx, R., R536 Vranić, M., E1046 Vuk-Pavlović, Z., L33

Waack, B. J., H359
Wachtfogel, Y. T., H1352
Wada, A., H2281
Wada, F., H1343, R583, R1289
Wada, M., E194
Waeber, B., H2267
Wagner, C. D., H621
Wagner, P. D., H1453
Waguespack, J., H1343, R658
Wahler, G. M., C45
Wahn, H., H2252
Walker, C.-D., R1281
Walker, D. W., R303
Walker, J. A., E15
Walker, R. L., S49
Walker, T. L., C563

Wallace, J. L., G134, G622 Wallberg-Henriksson, H., E613 Wallen, E. P., R293 Wallick, D. W., H384, H1939 Walmrath, D., H2252, L753 Walsh, J. H., G54, G90, G102, G586 Walsh, K., F760 Walsh, L. G., H2009 Walsh, M. P., H926 Walter, G., C869 Wang, H., F680, F693, F698 Wang, H.-S., C382 Wang, J., G102, H1343, L136, R808 Wang, L. C. H., R1507 Wang, L.-J., F461 Wang, N., C1062 Wang, P., G749, H1390 Wang, P. S., G171 Wang, Q., C877, G979 Wang, S. Y., C119 Wang, T., F204 Wang, T. C., G1025 Wang, T.-T., R105 Wang, W., F211, R8 Wang, X., C590, F671 Wang, Y. G., H1313, H1322 Wang, Y.-X., R951 Wang, Y.-Z., G465 Wang, Z., H1992, H1803 Wang, Z.-W., L368 Waniishi, Y., C162 Wanker, F., E213 Warburton, D., L625 Warburton, S. J., H56 Ward, G. M., E410 Ward, J. P. T., H301 Ward, S. M., C619 Ward, W. F., C952 Wareing, M., F778 Warltier, D. C., H720 Warner, D. O., L166 Warth, M. P. T. N., L781 Wasserloos, K., L862 Wasserman, D. H., E1174 Watanabe, H., H1462 Watanabe, S., H1276, H1284 Watkins, D. C., C1460 Watkins, M. T., H749 Watkins, S. C., L501 Watsky, M. A., C1179 Watson, C. L., H1749 Watson, D. D., H1555 Watson, E. G., G161 Watson, J. D., H1869 Watson, P. D., H184 Wattanapermpool, J., C323 Wead, L., F1004 Weaver, B. A., H2466 Weaver, L. C., H2077 Webb, P., R838 Weber, P. C., C36 Weber, W.-M., H1343, R605 Weeks, E. J., E1065 Wegrzyn, L. E., E730 Wei, C.-M., F657 Wei, D., H569 Wei, N., E145 Wei, X., C732 Weichert, G., H2302 Weidenbach, H., G328 Weigel, P. H., C952

Weigle, C. G. M., H2202

Wall, B. M., R156

#### **AUTHOR INDEX TO VOLUME 268**

Weinberg, J. M., F110 Weinbroum, A., G988 Weiner, M. W., C55 Weinsier, R. L., E917 Weisberg, A., H1621 Weiser, M. C. M., H1133 Weisinger, R. S., R1526 Weiss, H. R., H686, H1202 Weiss, J. L., H1918 Weissman, J., C317 Weissmann, N., L747 Weitzman, S. A., L471 Welbourne, T. C., C1418 Welch, W. J., F175 Weldon, D. T., R248 Welle, S., E67, E422 Wells, M. L., H1373 Welply, J. K., L245 Welsh, M. J., C1157, C1485, L615 Wenger, R., F46 Wennberg, P. W., H92 Weno, B. L., H359 Wensley, V. R., E752 Wenzel, H., H1352 Weselcouch, E. O., H242 West, D. B., H1343, R658 Westerhof, N., H945, H1540, H2162, H2531 Westerhoff, H. V., C1474 Westfall, T. C., H1549 Wetton, B. T. R., C1537 Wetzel, G. T., H1723 Wetzel, R., H250 Whalley, D. W., C366 White, A., E623 White, A. C., L809 White, J. E., L1052 White, R. T., L674 White, S. R., L957 Whiteley, K. J., H558 Whitsett, J. A., L381, L647 Wibbenmeyer, L. A., G311 Widdicombe, J. H., C886, L347 Widmaier, E. P., R1484 Wieland, S. J., C490 Wiener-Kronish, J. P., L181 Wiersma, M. M. L., R72 Wigle, D. A., H1869 Wijkhuisen, A., F634 Wijns, W., H1265 Wilborn, J., L294 Wilcox, C. S., F175 Wilke, C. P., L12 Wilkening, R. B., E705 Wilkins, F. C., Jr., R375, R395 Wilkinson, R., E121 Williams, A. J., C1235 Williams, B. D., E514 Williams, J. A., G1060 Williams, J. H., L245 Williams, J. L., H569

Williams, N. S., G650 Williams, R. E., H2311

Willoughby, K. A., H458 Wilson, J. J., E858

Wilson, J. M., L657, L839

Wilson, J. X., C1430, E565

Williams, S., H2125

Wilson, L. B., H1577

Wilson, L. M., H316 Wilson, R., E1174 Wilson, R. W., F778 Winaver, J., F323 Windhager, E. E., F480 Winegrad, S., H1621 Winesett, D. E., G631 Wingfield, J. C., R1418 Wingo, C. S., F363 Winpenny, J. P., C823 Winslow, R. M., H802 Wisneski, J. A., H879 Wittwer, A., L245 Wlodek, M. E., F868 Wołkowicz, P. E., H2505 Wojnar, M. M., R970 Wolf, G., F940 Wolf, P. D., H2336 Wolf, R., H2224 Wolfe, B. B., L101, L935 Wolfe, M. S., G215 Wolfe, R. R., E75, E514 Wolfenson, D., R66 Wolkoff, A. W., G18 Wong, G. H. W., R480 Wong, H. C., G54, G90, G586 Wong, K. C., H2009 Wong, K. R., F723 Wong, P. Y. D., C708 Wong, W. W., E153 Wood, C. E., E845, R343 Woodard, R. L., E693 Woodiwiss, A. J., H1096 Woods, S. C., R299, R423, R1418 Woodtli, W., G146 Wranne, B., H476 Wright, J. L., L17 Wright, J. R., L772 Wu, A.-M., L108 Wu, D., L361 Wu, F., L625 Wu, F. Y., E858 Wu, G., H767, R334 Wu, J., E1108, H2405 Wu, M.-F., C563, C1267 Wu, S.-Y., E33, E572 Wüller, S., G700 Wyeth, R. P., C1414

Xavier-Neto, J., H1773 Xia, C., F1102 Xiao, Y.-F., C1552 Xie, J., L991 Xu, J., L729 Xu, X., R286, R1153 Xu, Y., H1891 Xu, Z.-X., L683

Yabe, K., H2384 Yabuuchi, Y., H1149 Yai, H., C218 Yakubovich, M., G487 Yakubu, M., H2048 Yale, J.-F., E60 Yamaguchi, H., C771 Yamaguchi, N., R50, R1449 Yamakage, M., L187, L642

Yamakawa, A., H1077 Yamakawa, M., C237 Yamamoto, K., H1249 Yamamoto, S., H1249 Yamamoto, T., C64, C1546 Yamamoto, Y., H1682, H1688 Yamasaki, K., H1149 Yamashita, F., G849 Yamashita, M., E1065 Yamashita, N., E558 Yamaya, M., L284, L399 Yamazaki, N., E1070 Yan. G.-X., H1740 Yan, W., R334 Yan, Z., C918, E277 Yanaihara, N., G71 Yanaka, A., G933 Yandle, T. G., R201 Yang, B. C., H1015 Yang, C., E1027 Yang, C. C. H., R1242 Yang, E.-K., R1500 Yang, H., G548, G943 Yang, H. T., H1174 Yang, J., C1369, C1375 Yang, M. W., H2329 Yang, T., F1046 Yang, T. L.-C., H1499 Yang, Y., F1132 Yang, Y. F., E839 Yankaskas, J. R., C708, L270 Yannariello-Brown, J., C952 Yano, M., C1381, L95 Yao, Z., H2157 Yaoita, E., C1546 Yarasheski, K. E., E268 Yasuda, R. P., L101, L935 Yasui, S., L56 Yasutake, H., G1066, H1966 Yates, B. J., R1381 Ye, J.-M., E797, R1217 Ye, M.-Q., F220 Yeager, K. E., E1018 Yellin, E. L., H550 Yen, C.-T., H1499 Yi, E. S., L245 Yin, K., F561 Yin, S., L245 Yoguchi, A., H2084 Yokose, T., E262 Yokota, R., H1149 Yokoyama, K., H2017 Yokoyama, T., H517 Yoshida, I., F808 Yoshida, M., L230 Yoshimura, M., H1053 Yoshitomi, K., F20 Yoshizawa, N., F13 Youmans, D. C., L772 Youn, J. H., E712 Younes-Ibrahim, M., F1141 Young, A. A., H1304 Young, D. B., R825 Young, J. A., G806 Young, J. B., F613 Young, P., C1227 Young, S. L., L173, L539 Young, V. R., E174, E360, E668, E1143 Young, W. S., III, G346

Youngstrom, T. G., H1343, R744 Yu, A. S. L., F525 Yu, F. S., L809 Yu, X.-Y., L424 Yuan, W., C651, C1313 Yuan, X.-J., C259 Yuan, Y., H490 Yuhan, R., G374

#### Z

Zabner, J., L615 Zachwieja, J. J., E268 Zager, R. A., F1154 Zagon, I. S., R135, R942 Zahner, G., F940 Zaidi, M., F447 Zakharov, S. I., H1795 Zalups, R. K., F643 Zamir, N., E428 Zamir, O., E428 Zanchi, A., H2267 Zanzinger, J., R958 Zapol, W. M., H1343, L589, R816 Zarnegar, R., L1012 Zavecz, J. H., G410 Zawieja, D. C., H490 Zee, P. C., R293 Zeisberger, E., R514 Zelikovic, I., F155 Zeller, J., E652 Zepeda, M. L., L839 Zerwekh, J. E., E312 Zha, X., C1133 Zhang, C. X., L471 Zhang, F., R286 Zhang, H., H1847 Zhang, J., H1891 Zhang, L.-K., G754 Zhang, R.-S., R569 Zhang, S., H2321 Zhang, T., G71 Zhang, T.-M., E580 Zhang, X., G780 Zhang, X.-Y., L368, L950 Zhang, Y., E1205, H1891, H1814 Zhang, Z., G1025 Zhao, L., G270 Zhao, Y., L173 Zheng, B., E501 Zheng, C.-F., G1060 Zhong, Q., H955 Zhong, S., R1472 Zhou, B., C227 Zhou, H., C389, H1586 Zhou, M.-Y., C1045 Zhou, S.-Y., R1230 Ziegler, R. J., C978 Zierath, J. R., E613 Zijlstra, W. G., H974 Zile, M. R., H2104, H2495 Zimmerli, B., G797 Zinemanas, D., H633 Zingaro, G. J., H1343, R820 Zinker, B. A., E1174 Ziyadeh, F. N., F940 Zochodne, D. W., H584 Zoukhri, D., C713 Zuckerman, S., H1884 Zuege, D., L983 Zulueta, J. J., L809

